Almar Operating Company
102 River Cross Road
Box 976
Casper, Wyoming 82601

307-234-0592
B. W. Allen
President

XXXXXXXXXXXX
Vice President

Cleon Feight
Division of Oil, Gas, and Mining
1588 West, North Temple
Salt Lake City, Utah 84116

Dear Sir:

Enclosed is an application for a well, Peterson Springs Unit No. 1. The well is located 412' east and 379' south of the center of the NW-1/4 SE-1/4 Section 14, T17S, R21E, SLBM. The reason the site was so located is because the rugged topography would not allow a location closer to the center of the forty acre tract. Mosbacher Production Co. controls all land within 660 feet of the well site.

Yours very truly,

B. W. Allen

Utah State Land 524-5330

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## GEOLOGICAL SURVEY

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL
OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR
Mosbacher Production Co.

3. ADDRESS OF OPERATOR
c/o Almac Operating Co. P.O. Box 976 Casper, Wyoming 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
1610' ~~NSL~~ FSL 1568' ~~WEL~~ FWL NW SE

At proposed prod. zone
Same

5. LEASE DESIGNATION AND SERIAL NO.
State 27406

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
---

7. UNIT AGREEMENT NAME
~~Peterson Springs~~

8. FARM OR LEASE NAME
~~Peterson Springs~~

9. WELL NO.
#1

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec.14, T17S, R21E

12. COUNTY OR PARISH
Grand County

13. STATE
Utah

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
36 miles WNW of Mack, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)
1601' to Lease Line
6848' to Unit Line

16. NO. OF ACRES IN LEASE
13871.51 in unit

17. NO. OF ACRES ASSIGNED TO THIS WELL
320

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.

19. PROPOSED DEPTH
10,000'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
8377' GR

22. APPROX. DATE WORK WILL START*
ASAP after approval ~~depending on rig availability.~~

23. PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|---|---|---|---|---|
| 17-1/2" | 13-3/8" | 48# H-40 ST&C | 200' | Sufficient to circulate to surface |
| 12-1/4" | 9-5/8" | 36# K-55 ST&C | 0-3800' | 700 SX |
| 12-1/4" | 9-5/8" | 40# N-80 LT&C | 3800-5900' | |
| 8-1/2" | 5-1/2" | 17# K-55 Butt. | 0-2000' | 500 SX |
| 8-1/2" | 5-1/2" | 17# K-55 ST&C | 2000-8400' | |
| 8-1/2" | 5-1/2" | 17# N-80 LT&C | 8400-10,200' | |

Nicor
Texoma (One Eye)

APPROVED BY THE DIVISION
OF OIL, GAS, AND MINING
DATE: 9-26-80
BY: M. J. Minder

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
SIGNED B. W. Allen TITLE Petroleum Engineer DATE 8-8-80

(This space for Federal or State office use)

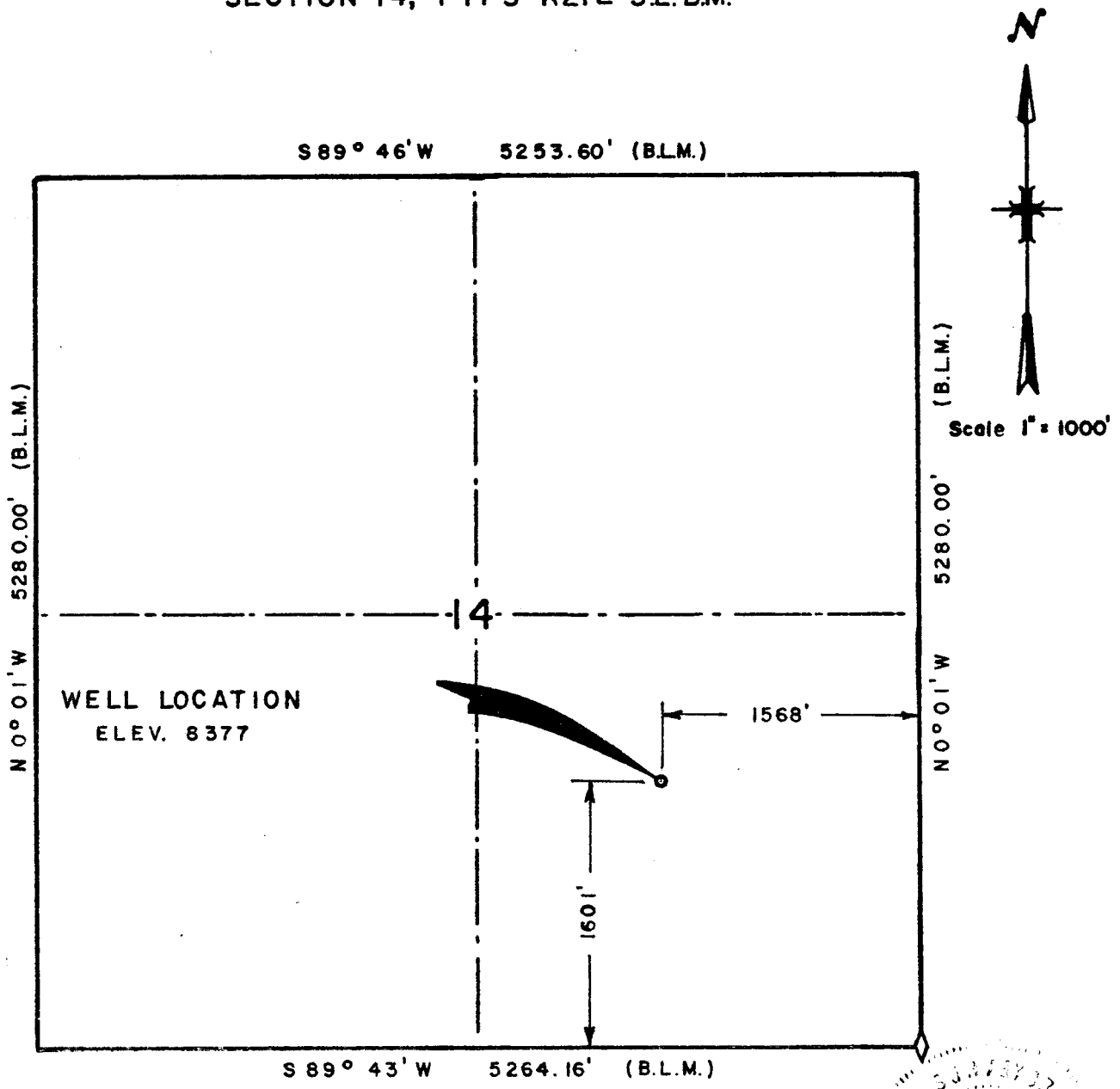
PERMIT NO. 43-019-30706 APPROVAL DATE 9/26/80

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

# WELL LOCATION
## 1568.0 FT. W.E.L.- 1605.0 FT. N.S.L.
## SECTION 14, T 17 S R21E S.L.B.M.

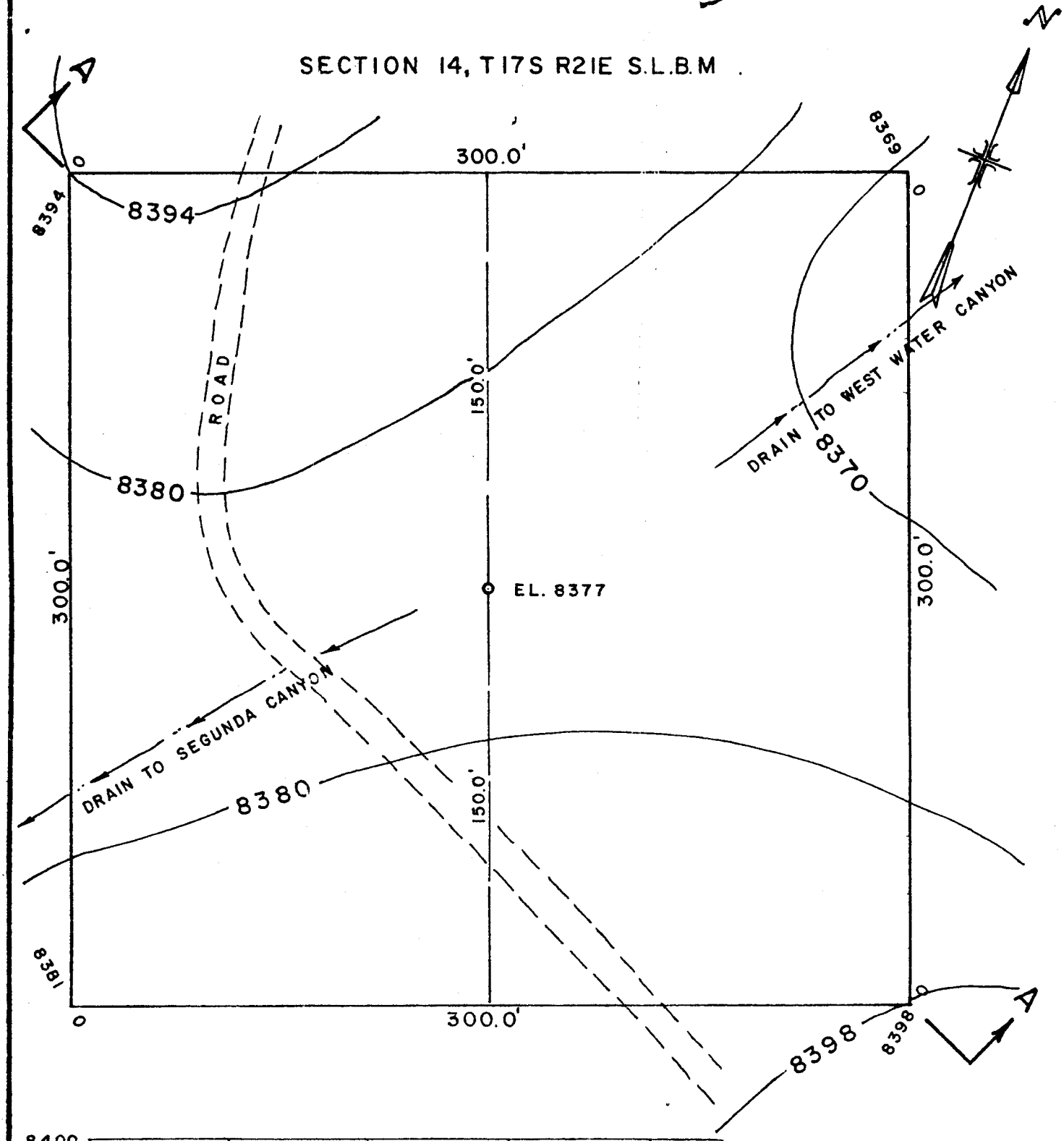


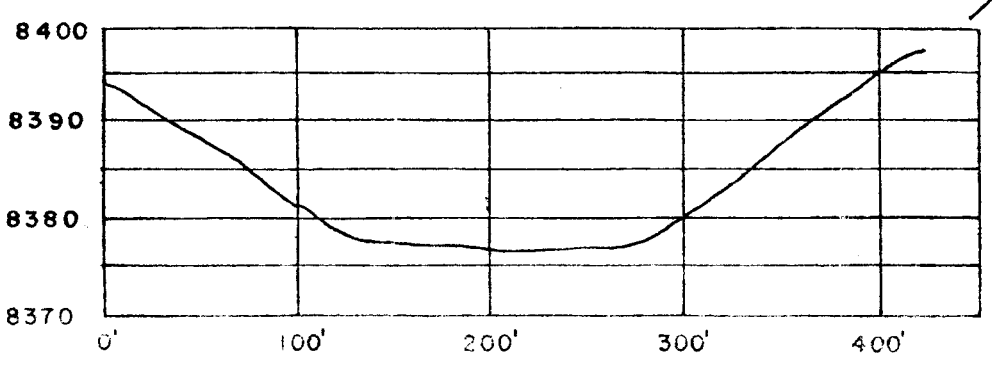

DAVID L BEAR REGISTERED 4880 LAND SURVEYOR STATE OF COLORADO

I, David L. Bear do hereby certify that this plat was plotted from notes of a field survey made under my direct responsibility, supervision and checking on July 29, 1980.

David L. Bear
Registered Land Surveyor

**WESTERN ENGINEERS, INC.**
WELL LOCATION
MOSSBACHER PRODUCTION CO.
PETERSON SPRINGS
ALT. UNIT NO. 1
GRAND COUNTY, UTAH
SURVEYED D.L.B. DRAWN S.L.A.
GRAND JUNCTION, COLO. 8/1/80




CROSS SECTION A-A

SCALE: 1" = 100'

SCALE: 1" = 50'

WESTERN ENGINEERS, INC.

SITE SURVEY

MOSSBACHER PRODUCTION CO.

PETERSON SPRINGS

ALT. UNIT NO. 1

GRAND COUNTY UTAH

Surveyed D.L.B. Drawn G.L.B.

Grand Junction, Colo. 8/4/80

2695

** FILE NOTATIONS **

DATE: August 15, 1980

OPERATOR: Mesbacher Production Co.

WELL NO: Peterson Springs Federal #1

Location: Sec. 14 T. 17S R. 21E County: Grand

File Prepared: ☐ Entered on N.I.D: ☐

Card Indexed: ☐ Completion Sheet: ☐

API Number 43-019-30706

CHECKED BY:

Petroleum Engineer: M.J. Minder 9-26-80

Director:

Administrative Aide: C-3(c)

APPROVAL LETTER:

Bond Required: ✓ Survey Plat Required: ☐

Order No. ✓ O.K. Rule C-3 ☐

Rule C-3(c), Topographic Exception - company owns or controls acreage within a 660' radius of proposed site ✓

Lease Designation ~~State~~ - not in unit Plotted on Map ✓

Approval Letter Written ✓

Hot Line ✓ P.I. ✓

October 17, 1980

Mosbacher Production Company
c/o Almac Operating Co.
P. O. Box 976
Casper, Wyoming 82602

Re: Well No. Peterson Springs Federal #1
Sec. 14, T. 17S, R. 21E
Grand County, Utah

Insofar as this office is concerned, approval to drill the above referred to gas well on said unorthodox location is hereby granted in accordance with Rule C-3(c), General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

MICHAEL T. MINDER - Petroleum Engineer
Office: 533-5771
Home: 876-3001

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (acquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-019-30706.

Sincerely,

DIVISION OF OIL, GAS, AND MINING

M. T. Minder

Michael T. Minder,
Petroleum Engineer

/ka
cc: Donald Prince

Form DOGC-4

# STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. 27406
Federal Lease No.
Indian Lease No.
Fee & Pat.

## REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE UTAH COUNTY GRAND FIELD/LEASE PETERSON SPRINGS UNIT

The following is a correct report of operations and production (including drilling and producing wells) for the month of: OCTOBER, 19 80.

Agent's Address 1300 Main, Suite 2100
Houston, Tx 77002

Phone No. 713-651-0100

Company Mosbacher Production Co.
Signed [signature]
Title Engineering Asst.

| Sec. and ¼ of ¼ | Twp. | Range | Well No. | Days Produced | Barrels of Oil | Gravity | Cu. Ft. of Gas (In thousands) | Gallons of Gasoline Recovered | Barrels of Water (If none, so state) | REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sec. 14 NE, SE | 17S | 21E | 1 | 0 | 0 | 0 | 0 | 0 | 0 | Spud well 10/30/80 TD 896' |

MAY 7 19[illegible]

DIVISION OF
OIL, GAS & MINING

Form DOGC-4

# STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. 27406
Federal Lease No.
Indian Lease No.
Fee & Pat.

## REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE UTAH COUNTY GRAND FIELD/LEASE PETERSON SPRINGS UNIT

The following is a correct report of operations and production (including drilling and producing wells) for the month of: NOVEMBER, 19 80.

Agent's Address 1300 Main, Suite 2100
Houston, Tx 77002

Phone No. 713-651-0100

Company Mosbacher Production Co.
Signed Beverly Dawson
Title Engineering Asst.

| Sec. and ¼ of ¼ | Twp. | Range | Well No. | Days Produced | Barrels of Oil | Gravity | Cu. Ft. of Gas (In thousands) | Gallons of Gasoline Recovered | Barrels of Water (If none, so state) | REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sec. 14 NW, NE | 17S | 21E | 1 | 0 | 0 | 0 | 0 | 0 | 0 | Drilling TD 5904' |

RECEIVED
MAY 7 19[illegible]
DIVISION OF
OIL, GAS & MINING

Form DOGC-4

# STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. 27406
Federal Lease No.
Indian Lease No.
Fee & Pat.

## REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE UTAH COUNTY GRAND FIELD/LEASE PETERSON SPRINGS UNIT

The following is a correct report of operations and production (including drilling and producing wells) for the month of: December, 19 80.

Agent's Address 1300 Main, Suite 2100
Houston, Tx. 77002

Phone No. 713-651-0100

Company Mesbacher Production Co.
Signed Beverly Lauden
Title Engineering Asst.

| Sec. and ¼ of ¼ | Twp. | Range | Well No. | Days Produced | Barrels of Oil | Gravity | Cu. Ft. of Gas (In thousands) | Gallons of Gasoline Recovered | Barrels of Water (if none, so state) | REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sec. 14 NW, NE | 17S | 21E | 1 | 0 | 0 | 0 | 0 | 0 | 0 | Set 9-5/8" casing to 5901', set 5-1/2" casing to 10353', released drilling rig 12/20/80. TD 10355'. |

Form DOGC-4

# STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. 27406
Federal Lease No.
Indian Lease No.
Fee & Pat.

## REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE UTAH COUNTY GRAND FIELD/LEASE PETERSON SPRINGS UNIT

The following is a correct report of operations and production (including drilling and producing wells) for the month of: January, 19 81.

Agent's Address 1300 Main, Suite 2100
Houston, Tx 77002

Phone No. (713) 651-0100

Company Monsanto Production Co.
Signed [signature]
Title Engineering Asst.

| Sec. and ¼ of ¼ | Twp. | Range | Well No. | Days Produced | Barrels of Oil | Gravity | Cu. Ft. of Gas (In thousands) | Gallons of Gasoline Recovered | Barrels of Water (if none, so state) | REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sec. 14 NW, NE | 17S | 21E | 1 | 0 | 0 | 0 | 0 | 0 | 0 | SI, waiting on completion rig. |

RECEIVED
MAY 7 1981
DIVISION OF
OIL, GAS & MINING

Form DOGC-4

# STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL & GAS CONSERVATION

1588 WEST NORTH TEMPLE
SALT LAKE CITY, UTAH 84116
328-5771

State Lease No. 27406
Federal Lease No.
Indian Lease No.
Fee & Pat.

## REPORT OF OPERATIONS AND WELL STATUS REPORT

STATE UTAH COUNTY GRAND FIELD/LEASE PETERSON SPRINGS UNIT

The following is a correct report of operations and production (including drilling and producing wells) for the month of: March, 19 81.

Agent's Address 1300 Main Street, Suite 2100
Houston, Texas 77002

Phone No. (713) 651-0100

Company Mobacher Production Co.
Signed Katherine Hanna
Title Production Clerk

| Sec. and ¼ of ¼ | Twp. | Range | Well No. | Days Produced | Barrels of Oil | Gravity | Cu. Ft. of Gas (In thousands) | Gallons of Gasoline Recovered | Barrels of Water (if none, so state) | REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sec. 14 NW, NE | 17S | 21E | 1 | 0 | 0 | 0 | 4,071± | 0 | 710± | Completing & testing. |

RECEIVED
MAY 7 1981
DIVISION OF
OIL, GAS & MINING

Mosbacher Production Co.
a
1300 Main Street, Suite 2100
Houston, Texas 77002

File in well
File ABT



June 29, 1981

Telephone
713 651-0100

Peterson Springs Unit Well No. 1
Sec. 14 T17S R21E
Grand County, Utah
Re: Commingling of Dakota and
Cedar Mountain Formations

State of Utah
Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

Attn: Mr. Cleon Feight

Gentlemen:

As per your conversation with Mr. Ed Bludworth on June 26, 1981, please accept this letter as written confirmation of Mosbacher Production Co.'s intent to commingle the Dakota and Cedar Mountain formations in the above subject well.

The Cedar Mountain formation was completed and stimulated in the interval 9469-9484. After fracturing this zone tested at a rate of 450 MCFD at 35 psi flowing tubing pressure. A bridge plug was set above this zone so that the Dakota formation could be tested.

The Dakota was completed from 9356 to 9396 and fractured. This zone has subsequently tested at a rate of 456 mcfd.

In view of the remoteness of the location and the low flowing tubing pressure, it would not be economical to attempt to produce either of these zones individually. Your verbal approval given to Mr. Bludworth to remove the bridge plug separating these zones is greatly appreciated.

Yours very truly,

MOSBACHER PRODUCTION CO.

Mike Stacy
Operations Manager

GMS/meh

cc: Ed Bludworth

Form OGCC-3

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: State 27406

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME: Peterson Springs Unit

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 14, T17S,R21E

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Mosbacher Production Co.

3. ADDRESS OF OPERATOR: 1300 Main St., Suite 2100, Houston, Tx 77002

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*

At surface: 1610' FSL & 1568' FEL, NW SE

At top prod. interval reported below

At total depth: Same

| 14. PERMIT NO. | DATE ISSUED | 12. COUNTY OR PARISH | 13. STATE |
|---|---|---|---|
| 43-019-30706 | 9/26/80 | Grand | Utah |

| 15. DATE SPUDDED | 16. DATE T.D. REACHED | 17. DATE COMPL. (*Ready to prod.*) | 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* | 19. ELEV. CASINGHEAD |
|---|---|---|---|---|
| 10/30/80 | 12/18/80 | 7/16/81 | KB 8392'; GL 8377' | ----- |

| 20. TOTAL DEPTH, MD & TVD | 21. PLUG, BACK T.D., MD & TVD | 22. IF MULTIPLE COMPL., HOW MANY* | 23. INTERVALS DRILLED BY | ROTARY TOOLS | CABLE TOOLS |
|---|---|---|---|---|---|
| 10,355' MD | 9800' MD | ----- | → | 0-10,355' | ------ |

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*

9469' - 9484' (Cedar Mountain)

9356' - 9396' (Dakota)

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: FDC-CNL-GR, DIL-GR, DILL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

| CASING SIZE | WEIGHT, LB./FT. | DEPTH SET (MD) | HOLE SIZE | CEMENTING RECORD | AMOUNT PULLED |
|---|---|---|---|---|---|
| 13-3/8" | 48# | 216' | 17-1/2" | 250 sxs Cl G | --- |
| 9-5/8" | 43.5#&36# | 5901' | 12-1/4" | 300 sxs Cl G | --- |
| | | | | | |

29. LINER RECORD

| SIZE | TOP (MD) | BOTTOM (MD) | SACKS CEMENT* | SCREEN (MD) |
|---|---|---|---|---|
| 5-1/2" | 5720' | 10,353' | 885 | ---- |

30. TUBING RECORD

| SIZE | DEPTH SET (MD) | PACKER SET (MD) |
|---|---|---|
| 2-7/8" | 9,258' | 9,258' |

31. PERFORATION RECORD (*Interval, size and number*)

9469'-9484' 1 SPF 4-1/2" csg gun

9356'-9396' 1 SPF 4-1/2" csg gun

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

| DEPTH INTERVAL (MD) | AMOUNT AND KIND OF MATERIAL USED |
|---|---|
| (SEE ATTACHED) | |

33.* PRODUCTION

| DATE FIRST PRODUCTION | PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*) | WELL STATUS (*Producing or shut-in*) |
|---|---|---|
| *N/A | Flowing | S.I. |

| DATE OF TEST | HOURS TESTED | CHOKE SIZE | PROD'N. FOR TEST PERIOD → | OIL—BBL. | GAS—MCF. | WATER—BBL. | GAS-OIL RATIO |
|---|---|---|---|---|---|---|---|
| 9/30/81 | 24 | 12/64" | | --- | 963 | TSTM | ---- |

| FLOW. TUBING PRESS. | CASING PRESSURE | CALCULATED 24-HOUR RATE → | OIL—BBL. | GAS—MCF. | WATER—BBL. | OIL GRAVITY-API (CORR.) |
|---|---|---|---|---|---|---|
| 1503 | ----- | | ---- | 963 | TSTM | ----- |

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Vented

TEST WITNESSED BY: Farrest Tefteller

35. LIST OF ATTACHMENTS: Logs, Geological Report.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Beverly A. Dausin TITLE Engineering Asst. DATE 10/20/81

*(See Instructions and Spaces for Additional Data on Reverse Side)

*Waiting on Pipeline connection.

# INSTRUCTIONS

**General:** This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

**Item 4:** If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

**Item 18:** Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

**Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

**Item 29:** *"Sacks Cement"*: Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

**Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

| 37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES | | | | 38. GEOLOGIC MARKERS | | |
|---|---|---|---|---|---|---|
| FORMATION | TOP | BOTTOM | DESCRIPTION, CONTENTS, ETC. | NAME | TOP | |
| | | | | | MEAS. DEPTH | TRUE VERT. DEPTH |
| | | | (SEE ATTACHED GEOLOGICAL REPORT) | | | |

32. Acid, Shot, Fracture, Cement Squeeze, Etc.

| DEPTH INTERVAL (MD) | AMOUNT & KIND OF MATERIAL USED |
|---|---|
| 9469'-9484' | Frac'd w/10,000 gals SCF $N_2$ pad, 24 ball sealers, 48 bbls w/500 SCF/bbl of $N_2$. Avg press 4250#, SI. 4190#.<br><br>Acid'z w/1500 gals 15% HCL + 24-7/8" ball sealers spaced thru, ISIP 1920#, MP 3700#.<br><br>Frac w/5000 gals w/$CO_2$ Pad + 25000 gals. 20/40 Sd, ISIP 2600#, 5 mins 2000#, 10 mins 1800#, 15 mins 1600#. |
| 9356'-9396' | Frac w/12,000 gal pad w/50# GWX-4 & 142858 SCF $CO_2$ @ 14.2 BPM @ 7700# w/20-40 Sd.<br><br>Frac w/12,000 gal GWX-4 gel pad w/400 SCF CO2 + 10,000 gal w/5000# 20/40 Sd & 400 SCF $CO_2$; 20,000 gal w/15,400 gal 20/40 Sd + 400 SCF $CO_2$; 10,000 gal 15,500# Sd w/400 SCF $CO_2$, 4,200 gal 8,400# Bauxite; Flush w/2270 gal 3% KCL. Max Press 8000#. |

10/20/81
/bd

Form C-122
Revised 9-1-65

# MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

| | | | |
|---|---|---|---|
| Type Test: ☒ Initial ☐ Annual ☐ Special | | Test Date: 9-28-81 | |
| Company: Mosbacher Production Company | Connection: | | |
| Pool: Wildcat | Formation: | | Unit: N/A |
| Completion Date: 7/16/81 | Total Depth: 10,355 | Plug Back TD: | Elevation: | Farm or Lease Name: Peterson Springs Unit |
| Csg. Size: 5½" / Wt.: 17# / d: / Set At: 10,353 | Perforations: From 9356 To 9396 | | | Well No.: 1 |
| Tbg. Size: 2⅞ / Wt.: 6.4# / d: / Set At: 9258 | Perforations: From 9469' To 9484' | | | Unit: 14 / Sec.: 17S / Twp.: 21E / Rge.: |
| Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single | Packer Set At: 9258 | | | County: Grand |
| Producing Thru: | Reservoir Temp. °F: 226 @ 9220 | Mean Annual Temp. °F: | Baro. Press. – $P_a$: | State: Utah |

| L | H | Gg | % $CO_2$ | % $N_2$ | % $H_2S$ | Prover | Meter Run | Taps |
|---|---|---|---|---|---|---|---|---|
| | | 0.650 | | | | | | |

| | FLOW DATA | | | | TUBING DATA | | CASING DATA | | |
|---|---|---|---|---|---|---|---|---|---|
| NO. | Prover Line Size X Orifice Size | Press. L-10 | Diff. L-10 | Temp. °F | Press. p.s.i.g. | Temp. °F | Press. p.s.i.g. | Temp. °F | Duration of Flow |
| SI | | | | | 1780 | | Pkr. | | |
| 1. | 4" X 1" | 7.8 | 2.5 | 84 | 1750 | | Pkr. | | 2 hours |
| 2. | 4" X 1" | 7.8 | 4.5 | 70 | 1716 | | Pkr. | | 2 hours |
| 3. | 4" X 1" | 7.8 | 6.9 | 84 | 1607 | | Pkr. | | 2 hours |
| 4. | 4" X 1" | 7.8 | 9.3 | 80 | 1503 | | Pkr. | | 2 hours |
| 5. | | | | | | | | | |

## RATE OF FLOW CALCULATIONS

| NO. | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure L-10 | Flow Temp. Factor Ft. | Gravity Factor Fg | Super Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
|---|---|---|---|---|---|---|---|
| 1 | 4.753 | 19.50 | 2.236 | 0.9777 | 1.240 | 1.027 | 258.03 |
| 2. | 4.753 | 35.10 | 2.236 | 0.9905 | 1.240 | 1.027 | 471.54 |
| 3. | 4.753 | 53.82 | 2.236 | 0.9777 | 1.240 | 1.027 | 712.17 |
| 4. | 4.753 | 72.54 | 2.236 | 0.9813 | 1.240 | 1.027 | 963.41 |
| 5. | | | | | | | |

| NO. | $P_r$ | Temp. °R | $T_r$ | Z |
|---|---|---|---|---|
| 1. | | USED | | |
| 2. | | SIMPLIFIED | | |
| 3. | | SUPERCOMPRESSIBILITY | | |
| 4. | | TABLES | | |
| 5. | | | | |

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure 670 P.S.I.A. _____ P.S.I.A.
Critical Temperature 375 R _____ R

$P_f$ 2234.2 $P_f^2$ 4992

| NO | $P_t^2$ | $P_s^2$ | $P_s^2$ | $P_f^2 - P_s^2$ |
|---|---|---|---|---|
| 1 | | 2204.2 | 4858 | 134 |
| 2 | | 2158.2 | 4658 | 334 |
| 3 | | 2101.2 | 4415 | 577 |
| 4 | | 2037.2 | 4150 | 842 |
| 5 | | 1956.2 | 3827 | 1165 |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 5.928741$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3.960425$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3815.51$

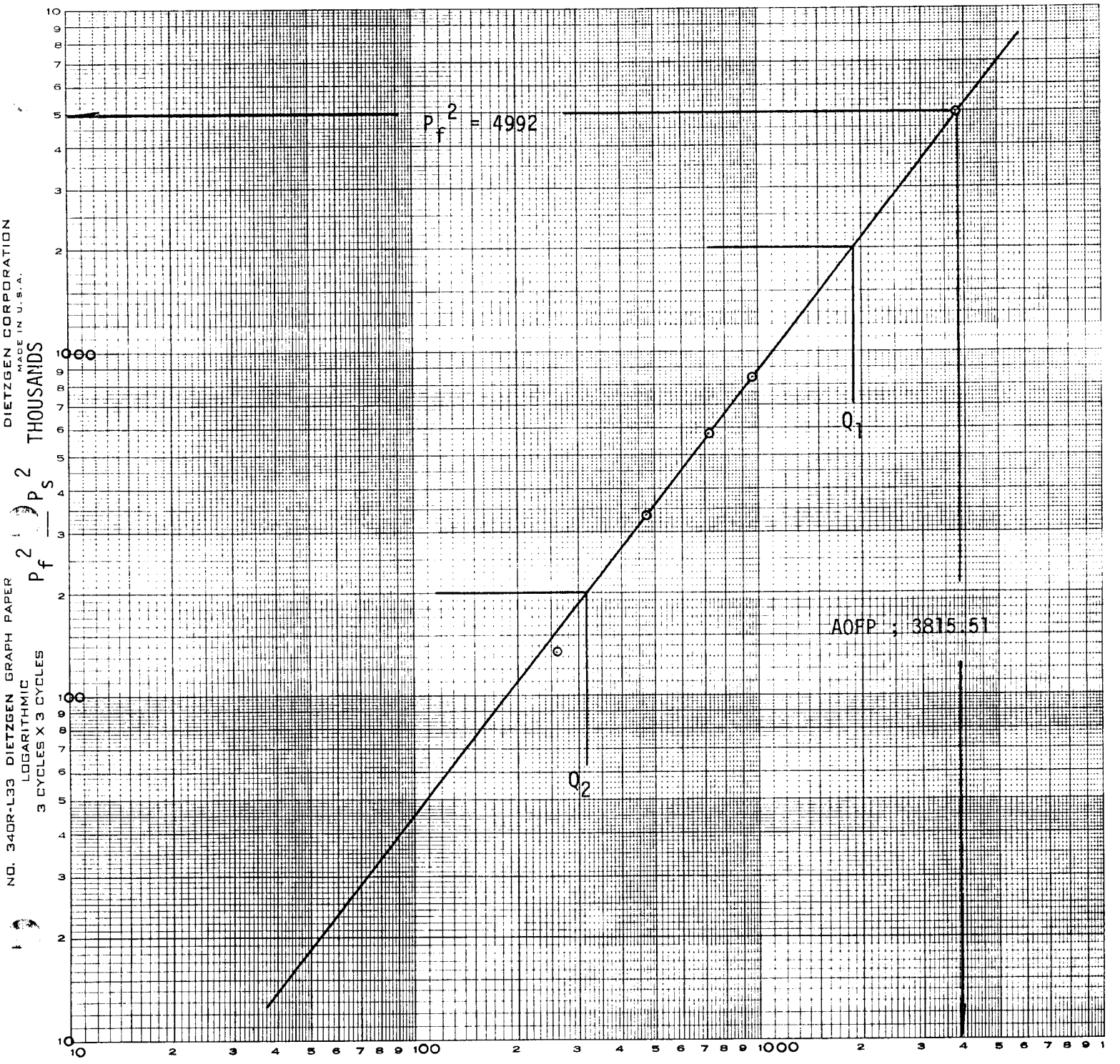
Absolute Open Flow 3815.51 Mcfd @ 15.025 | Angle of Slope θ 52°17' | Slope, n 0.773313

Remarks: BHP measured with Amerada RPG-3 Gauge, Serial No. 47616, 0-6000 P.S.I.G.

| Approved By Commission: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| | Tefteller, Inc. | Farrest Tefteller | |

Company : Mosbacher Production Company
Well : Peterson Springs Unit No. 1
County : Grand
State : Utah
Date : September 28, 1981

BACK PRESSURE CURVE




Q = mcfd

$Q_1$ = 1875 ; LOG $Q_1$ = 3.273001

$Q_2$ = 316 ; LOG $Q_2$ = 2.499688

n = 0.773313

$\emptyset = 52^{o}\ 17'$

# GEOLOGICAL REPORT

MOSBACHER PRODUCTION COMPANY
PETERSON SPRINGS UNIT WELL #1
Sec. 14, T17N-R21E
Grand County, Utah



BY: MARK FERNANDES
P.S.M., Inc.
235 N. Wolcott Suite 14
Casper, Wyoming 82601
Ph. 307-266-1276

# WELL DATA

| | |
|---|---|
| OPERATOR: | Mosbacher Production Company |
| WELL NAME: | Peterson Springs Unit Well #1 |
| LOCATION: | 1601 FSL 1578 FEL Sec. 14, T17N-R21E |
| COUNTY: | Grand |
| STATE: | Utah |
| ELEVATION: | Gr 8377 Kb 8392 |
| DRILLING FORMAN: | Mr. Richard Lauters; TOOLPUSHER,Emery Hoggart |
| CONTRACTOR: | True Drilling Co. |
| DRILLERS: | Ernie Staab, Don Eisenhauer, Haskell Reed |
| DRAW WORKS: | National 50 A |
| DERRICK: | Lee C. Moore |
| MOTORS: | Waukesha Diesel |
| PUMPS: NO. 1<br>NO. 2 | National k-200<br>National c-250 |
| DRILL PIPE: | 4 1/2 X-H |
| DRILL COLLARS: | 7" H-90, 6 1/2" X-H |
| MUD COMPANY: | Baroid |
| MUD ENGINEER: | Lyn Harber |
| DRILLING FLUID: | KCL, Leogel, Drispac, Dextrid |
| ELECTRICAL LOGGING: | Schlumberger |
| LOGGING ENGINEER: | M. Puckett, Roger Olsen |
| SURVEYS RUN | Run 1 DIL W/GR, SP 5897-214, FDC-CNL W/Cal, GR 5896-1030,<br>Run 2 DIL W/GR, SP 5891-10355, FDC-CNL W/CAL, GR 5891-10358 |

| | |
|---|---|
| MUD LOGGING: | Tooke Engineering, Hot Wire, Chromatagraph |
| LOGGER: | Larry Hunold, John Pudliner, Justin Aro |
| CASING: | 13 3/8" @216', 9 5/8" @5901, 5 1/2" Liner @ 10355 |
| CEMENTERS: | Surface-Halliburton, Intermediate, B.J. Hughes, Liner-B.J. Hughes. |
| HOLE SIZE: | 17 1/4" to 216', 12 1/4 to 5904, 8 1/2" to 10355 |
| SAMPLES: | 30 ft. to 2720; 20 ft. to 3300, 30 ft. to 6200 50 ft. to 7450; 30 ft. to 9400· 10ft. to 9400- TD |
| SAMPLE DISPOSITION: | Dry cuts to Mosbacher; Wetcuts to Amstrat, Casper, Wyo. |
| COMMENCED: | 10-29-80 |
| DATE TOTAL DEPTH: | 12/18/80 |
| TOTAL DEPTH: | Driller TD 10355 Loggers TD 10361 |

FORMATION TOPS

| FORMATION | SAMPLE DEPTH | LOG DEPTH | LOG K.B. DATUM |
|---|---|---|---|
| Green River (Tertiary) | Surface | | |
| Wasatch (Tertiary) | 2230 | 2260 | +6132 |
| Mesa Verde (cretaceous) | 3180 | 3130 | +5289 |
| Buck Tongue (Cretaceous) | 5335 | 5344 | +3048 |
| Castlegate (Cretaceous) | 5520 | 5543 | +2849 |
| Mancos Transition (Cretaceous) | 5705 | 5723 | +2669 |
| Mancos (Cretaceous) | 5840 | 5846 | +2546 |
| Dakota Silt (Cretaceous) | | 9257 | -865 |
| Dakota Sandstone (Cretaceous) | 9350 | 9353 | -961 |
| Ceder Mountain (Cretaceous) | 9460 | 9470 | -1078 |
| Morrison (Jurrasic) | 9530 | 9530 | -1138 |
| Salt Wash (Jurrasic) | 9780 | 9825 | -1433 |
| Summerville (Jurrasic) | 10210 | 10200 | -1808 |
| Entrada (Jurrasic) | 10270 | 10268 | -1876 |

## DAILY WELL HISTORY

| DATE | DEPTH | OPERATION | FOOTAGE | REMARKS |
|---|---|---|---|---|
| 10-26-80 | | Rigging Up | | |
| 10-27-80 | | Rigging Up | | |
| 10-28-80 | | Rigging Up | | |
| 10-29-80 | | Rigging Up | | Commence Drilling at 10:00 PM |
| 10-30-80 | 422 | Drilling with Air | 248' | |
| 10-31-80 | 911 | Drilling with Air | 489' | Trip for NB #2, HTC J22 12 1/4" @ 1067, Tite hole @ 500' |
| 11-1-80 | 1067 | Drilling with Air | 156' | |
| 11-2-80 | 1733 | Drilling with Air | 666' | |
| 11-3-80 | 2222 | Drilling with Air | 489' | Stuck Pipe at 2612'; 3 stands off bottom |
| 11-4-80 | 2612 | Jarring | 390' | Back off, leave 6 collars in hole |
| 11-5-80 | 2612 | Fishing | 0' | |
| 11-6-80 | 2612 | Fishing | 0' | Wash over pipe stuck. Back off. |
| 11-7-80 | 2612 | Fishing | 0' | |
| 11-8-80 | 2612 | Fishing | 0' | |
| 11-9-80 | 2612 | Fishing | 0' | |
| 11-10-80 | 2612 | Fishing | 0' | |
| 11-11-80 | 2612 | Fishing | 0' | |
| 11-12-80 | 2612 | Fishing, Mixing Mud | 0' | |
| 11-13-80 | 2612 | Fishing | 0' | Recover rest of Fish; TIH with Bit #3 STC 12 3/4" at 2612 |

DAILY WELL HISTORY
PAGE 2

| | | | | |
|---|---|---|---|---|
| 11-14-80 | 2612 | TIH | 0' | Resume Drilling at 0730 |
| 11-15-80 | 2816 | Drilling with mud | 204' | Trip for Bit #4 STC F-3 12 1/4" at 2822 |
| 11-16-80 | 2855 | Drilling with mud | 62' | |
| 11-17-80 | 3046 | Drilling with mud | 191' | Making periodic short trips due to tight hole |
| 11-18-80 | 3222 | Drilling with mud | 176' | Converted to aerated mud |
| 11-19-80 | 3379 | Drilling with aerated mud | 157' | Trip for Bit #5 Reed H551 12 1/4" at 3291 |
| 11-20-80 | 3729 | Drilling with aerated mud | 350' | |
| 11-21-80 | 3973 | Tripping | 244' | Trip for Bit #6 Rerun #2 J-22 12 1/4" at 3973 |
| 11-22-80 | 4190 | Tripping | 217' | Trip for Bit #7 STC F-2 121/4" at 4190 |
| 11-23-80 | 4517 | Drilling with aerated mud | 327' | |
| 11-24-80 | 4763 | Drilling with aerated mud | 246' | |
| 11-25-80 | 4976 | Drilling with aerated mud | 213' | |
| 11-26-80 | 5259 | Drilling with aerated mud | 283' | |
| 11-27-80 | 5545 | Drilling with aerated mud | 286' | Trip for Bit #8 HTC J-22 12 1/4" at 5562 |
| 11-28-80 | 5643 | Drilling with aerated mud | 98' | Lost circulation at 5637,1000 barrels |

DAILY WELL HISTORY
PAGE 3

| | | | | |
|---|---|---|---|---|
| 11-29-80 | 5770 | Drilling with aerated mud | 127' | |
| 11-30-80 | 5904 | Prepare to run logs | 134' | Run DIL W/GR, SP FDC-CNL W/GR, cal. |
| 12-1-80 | 5904 | Set intermidiate casing | 0' | Cement with 300SX |
| 12-2-80 | 5904 | Drilling out Cement | 0' | Bit #9 HTC J-33 8 1/2" at 5904 Drill out 95 ft cement |
| 12-3-80 | 6234 | Drilling with Air | 330' | |
| 12-4-80 | 7347 | Drilling with Air | 1113' | |
| 12-5-80 | 8601 | Drilling with Air | 1254' | |
| 12-6-80 | 9254 | Drilling with Air | 653' | Trip for Bit # 10 STC F-5 8 1/2" at 9225 |
| 12-7-80 | 9624 | Drilling with Air Mist | 370' | Start misting at 9508 |
| 12-8-80 | 9946 | Tripping | 322' | Lost air Circulation Trip our for Bit #11 STC F-4 8 1/2" at 9946 Mud up |
| 12-9-80 | 9946 | Drilling out fill | 0' | Start hitting bridges at 9100 |
| 12-10-80 | 9965 | Stuck in hole | 0' | Back off leave 13 collars in hole |
| 12-11-80 | 9965 | Fishing | 0' | |
| 12-12-80 | 9965 | Fishing | 0' | Recover 6 collars |
| 12-13-80 | 9965 | Rigging up loggers | 0' | Run DIL W/GR-SP FDC-CNL W/GR, cal to 9655, Resume fishing |
| 12-14-80 | 9965 | Fishing | 0' | |

DAILY WELL HISTORY
PAGE 4

| | | | | |
|---|---|---|---|---|
| 12-15-80 | 9965 | Fishing | 0' | Recover rest of fish TIH with bit 13, HTC J44 8 1/2" at 9965 |
| 12-16-80 | 10014 | Drilling | 49' | Drilling with mud |
| 12-17-80 | 10166 | Drilling | 152' | |
| 12-18-80 | 10340 | Pumb LCM Pill | 174' | Lost Circulation at 10340 |
| 12-19-80 | 10355 | Running Logs | 15' | |

GEOLOGAICAL SUMMARY

The Peterson Springs Unit Well #1 is in the SW corner of Section 14, Township 17S, Range 21E and located regionally on the southeastern edge of the Vintah Basin in Grand County, Utah. The prospect was drilled in hopes of discovering a combination of stratigraphic and structural traps. Primary objectives for the well were the Dakota Sandstone and the Cedar Mountain Sandstone. Secondary objectives were Castlegate (Cretaceous), Emery (Cretaceous), Brushy Basin (Jurasic) and Entrada (Jurasic). A list of potentially significant shows is below in the same order they were drilled.

CASTLEGATE: LOG TOP 5543

The Castlegate Sandstone is a fine-medium grained, white-clear sandstone that is subrounded to subangular and moderately well sorted. Three to five percent of the sample had bright greenish yellow fluorescence. When emmersed in Chlorethene of less than 1% the sample exhibited a slow weak, streaming cut and most of the grains that fluoresced left a residue, when allowed to remain in the Chlorethene over night. Logs indicated the top three feet of this zone to have 14% porosity with 84% water saturation. The FDC-CNL log showed 1-4 units of crossover through this three foot interval. The next 25 feet below this zone indicated porosities between 12 and 7%, averaging 10-11%, and water saturations ranging from 52-64%. $R_W$ was calculated to be .25 ohms at formation temperature by using the F factor overlay method. This formation was not drill stem tested in open hole due to poor hole conditions. However, intermediate casing was set through this zone and cement should have adequately covered the interval in question. It is believed this zone should be tested for possible oil production.

EMERY (ALSO KNOWN ASMANCOS "B"): LOG TOP 6235

The Emery member of the Mancos consists of interbedded shaley sandstones and shale. The sandstone is clear to slightly frosted, very fine to fine grained, and subangular. The sample was all loose grains, so the degree of cementation and visual porosity estimates are unavailable. There were two gas kicks encountered while drilling, one at 6272 and another at 6380. There were no flares present while drilling, however, at 6404 and 6437, after being down for about one hour for surveys flares were present, after the air was turned back on, for 15 seconds and 27 seconds respectively. Logs indicate a very shaley sandstone through this zone. Production from this zone in other areas is thought to be from fractures in shaley sandstones and shale. The limited amount of gas encountered while drilling with air through this zone probably indicates a very limited reservoir that most likely would not be economic to produce.

DAKOTA SANDSTONE: LOG TOP9353

The Dakota Sandstone is a white to clear, medium grained, sub rounded to subangular sandstone with fair to poor sorting. Due to (cont. Pg.2)

DAKOTA SANDSTONE: LOG TOP 9353
continued

air drilling, there were no aggregates of sandstone in the sample. Therefore, degree of cementation and clay infill is unknown. There was a gas kick of 440 units over a background of 12 units. The gas broke down to 36160 ppm Methane and 1400 ppm ethene. There was a flare after the next connection for 3-4 minutes. A gas check was conducted at 9414. The bit was lifted 60 ft. off bottom, and the air was shut off for 30 minutes. No gas made it to the surface during this period but after the air was turned on there was a flare for 70 seconds. The Dual induction log through this zone read 16 feet of very high resistivities (mostly over 30 ohm.) The FDC-CNL was of very poor quality through this zone due to a rugose hole. However, one 4 foot interval that seemed to be of good log quality indicated porosities of 9-10%. Using an Rw of .052 ohms (calculated by sp method), water saturation came out to be between 22 and 35 %.

CEDAR MOUNTAIN: LOG TOP 9470

The Cedar Mountain contained a white, fine to medium grained rounded to subrounded sandstone with good sorting. Due to air drilling there were no sandstone aggregates present in the sample. Therefore the degree of cementation and clay infilling estimates are unavailable. Gas did surface while drilling and a flare was present for 3-4 minutes. After the air was shut off for the next connection there was an immediate flare. Rate of flow was estimated at 100 mcfgpd ( strictly an eyeball estimate made by the drilling consultant). After drilling this zone, all connections were followed by a 4-8 minute flare. Background gas before drilling this zone was less than 50 units. Afterward, background gas stayed around 300 units of total gas (36000 ppm Methane, 1750 ppm ethane, 350 ppm propane, 150 ppn butane) or about 3.8%. The Dual Induction Log indicates approximately 20 feet of sand with true resistivities between 10 and 40 ohms, averaging 20 ohms. The FDC-CNL log indicated 18 feet of sand with porosities ranging between 12 and 18 % The entire interval showed crossover ranging between 1 and 4 units. Using an Rw of .07 ohms (calculated from sp ) water saturations ranged from 32-78 %. This interval should be tested for possible gas production.

MORRISON: LOG TOP 9530

From 9710-9720 in the Morrison formation a white, very fine grained sandstone was encountered that appeared to have fair porosity. However, the samples were of poor quality through this interval so an accurate description of the lithology was difficult. There was a flare present while drilling this interval, however, due to erratic

MORRISON: LOG TOP 9530

returns the source of this gas was questionable. Background gas before drilling this sand was around 400 units where as afterwards the background gas stayed around 300 units. However, returns were erratic throughout the rest of the time we were air drilling. Subsequent logging indicated very good porosity through this interval (about 10 feet), but low resistivities indicate the zone to be wet. This interval should be tested for possible gas production.

Also in the Morrison Formation, from 9838-9840 logs indicated a 12 foot thick sandstone. There were no shows in this zone while drilling, however, as noted above, returns and samples were quite poor. According to the Dual Induction log, true resistivity of this sand is from 100-200 onms. The FDC-CNL indicates porosities between 7 and 8%. Using an Rw of .08ohms, water saturation is between 34 and 39%. This sand is obviously tight, however,if stimulated this zone may be productive.

## BIT RECORD

| NUMBER | MAKE | SIZE | TYPE | DEPTH OUT | FOOTAGE | HOURS | REMARKS |
|---|---|---|---|---|---|---|---|
| 1 | HTC | 12 1/4 | OSCIGJ | 1067 | 893 | 32 1/2 | |
| 2 | HTC | 12 1/4 | J-22 | 2612 | 1545 | 53 | |
| 3 | STC | 12 1/4 | DTJ | 2822 | 212 | 23 1/2 | |
| 4 | STC | 12 1/4 | F-3 | 3291 | 469 | 58 1/2 | |
| 5 | Reed | 12 1/4 | H551 | 3973 | 682 | 45 1/2 | |
| 6 | HTC | 12 1/4 | J-22 | 4190 | 217 | 14 | Rerun Bit # 2 |
| 7 | STC | 12 1/4 | F-2 | 5562 | 1372 | 99 1/2 | |
| 8 | HTC | 12 1/4 | J-22 | 5904 | 342 | 43 1/2 | |
| 9 | HTC | 8 1/2 | J-33 | 9225 | 3322 | 62 3/4 | |
| 10 | STC | 8 1/2 | F-5 | 9947 | 722 | 38 | |
| 11 | STC | 8 1/2 | F-4 | 9965 | 18 | 1 1/2 | |
| 12 | HTC | 8 1/2 | OSG16J | 9965 | 0 | | Used to drill out fill only |
| 13 | HTC | 8 1/2 | J-44 | 10355 | 390 | 56 3/4 | |

## DEVIATION SURVEYS

| NUMBER | DEPTH | DEVIATION | KIND |
|---|---|---|---|
| 1 | 254 | 3/4° | Wireline |
| 2 | 505 | 1/2° | Wireline |
| 3 | 754 | 1/4° | Wireline |
| 4 | 912 | 3/4° | Wireline |
| 5 | 1027 | 3/4° | Wireline |
| 6 | 1756 | 1° | Wireline |
| 7 | 2899 | 1° | Wireline |
| 8 | 3740 | 3/4° | Wireline |
| 9 | 5562 | 3/4° | Wireline |
| 10 | 6437 | 1 1/2° | Wireline |
| 11 | 7003 | 5° | Wireline |
| 12 | 7500 | 2 1/2° | Wireline |
| 13 | 8004 | 2 1/2° | Wireline |
| 14 | 8505 | 2 1/2° | Wireline |
| 15 | 9194 | 2° | Wireline |
| 16 | 10355 | 4° | Wireline |

MUD RECORD

| DATE | DEPTH | WT. | VIS. | pH | WATER LOSS | FILTER CAKE | | CUMULATIVE COSTS |
|---|---|---|---|---|---|---|---|---|
| 10/26/80- | 11/3/80 | Drilling with air, mist and foam | | | | | | |
| 11/4/80 | 2612 | 8.6 | 31 | 8.5 | N/C | N/C | | 15,331 |
| 11/5/80 | 2612 | 8.4 | 40 | 8.5 | N/C | N/C | | 23,975 |
| 11/6/80 | 2612 | 8.8 | 38 | 9 | N/C | N/C | | 29,728 |
| 11/7/80 | 2612 | 8.7 | 35 | 8.5 | 15.4 | 2/32 | | 37,597 |
| 11/8/80 | 2612 | 8.7 | 40 | 7.8 | 40 | 2/32 | | 38,154 |
| 11/9/80 | 2612 | 8.8 | 42 | 8 | 20 | 1/32 | hard/ slick | 38,759 |
| 11/10/80 | 2612 | 9 | 42 | 9.3 | 13.2 | 1/32 | | 44,031 |
| 11/11/80 | 2612 | 9 | 42 | 8.8 | 16.8 | 1/32 | | 44,799 |
| 11/12/80 | 2612 | 8.9 | 45 | 7.8 | 24.8 | 2/32 | | 49,511 |
| 11/13/80 | 2612 | 9 | 60 | 7.8 | 30 | 2/32 | | 54,065 |
| 11/14/80 | 2612 | 9 | 61 | 7.6 | 38.8 | 3/32 | | 55,138 |
| 11/15/80 | 2816 | 9 | 40 | 9 | 11.8 | 1/32 | | 58,207 |
| 11/16/80 | 2855 | 9.1 | 47 | 8.8 | 12 | 1/32 | | 58,985 |
| 11/17/80 | 3046 | 9 | 42 | 8.8 | 15.2 | 1/32 | | 62,606 |
| 11/18/80 | 3222 | 9 | 38 | 9.1 | 13.6 | 1/32 | | 64,530 |
| 11/19/80 | 3358 | 9.4 | 50 | 9.5 | 13.6 | 1/32 | | 67,367 |
| 11/20/80 | 3729 | 9 | 45 | 8.1 | 35.6 | 2/32 | | 71,014 |
| 11/21/80 | 3973 | 9.2 | 34 | 8.3 | 16.6 | 1/32 | | 77,190 |
| 11/22/80 | 4190 | 9.1 | 33 | 9.1 | 19.2 | 1/32 | | 81,534 |
| 11/23/80 | 4495 | 9.4 | 34 | 8 | 22 | N/C | | 85,321 |
| 11/24/80 | 4730 | 9.1 | 31 | 7.4 | 41.2 | 2/32 | | 86,809 |
| 11/25/80 | 4955 | 9.2 | 36 | 7.6 | 16 | 1/32 | | 87,843 |
| 11/26/80 | 5230 | 8.9 | 31 | 6.9 | 25.2 | 2/32 | | 90,387 |
| 11/27/80 | 5512 | 8.7 | 30 | 7.1 | 18.8 | 1 | | 94,994 |
| 11/28/80 | 5640 | 8.9 | 33 | 7 | 20 | 1 | | 98,992 |
| 11/29/80 | 5789 | 8.9 | 35 | 8.7 | 18 | 1 | | 103,904 |
| 11/30/80 | 5904 | 8.8 | 32 | 9.5 | 22 | 1 | | 109,999 |
| Drilling with air and air mist 12/1/80 through 12/7/80 | | | | | | | | |
| 12/8/80 | 9947 | 8.8 | 43 | 8.4 | 52 | 3 | | 123,518 |
| 12/9/80 | 9947 | 8.8 | 42 | 8 | 62 | 3 | | 125,049 |
| 12/10/80 | 9965 | 8.5 | 33 | 2.2 | N/C | 2 | | 137,344 |
| 12/11/80 | 9965 | 8.7 | 35 | 8 | 24 | 2 | | 140,599 |
| 12/12/80 | 9965 | 8.8 | 37 | 9 | 24 | 1 | | 146,007 |
| 12/13/80 | 9965 | 8.8 | 38 | 9.5 | 16 | 1 | | 147,729 |
| 12/14/80 | 9965 | 8.8 | 35 | 9.2 | 19.6 | 1 | | 147,729 |
| 12/15/80 | 9965 | 8.9 | 39 | 9.2 | 19.2 | 1 | | 147,986 |
| 12/16/80 | 10000 | 8.9 | 38 | 9.3 | 20.4 | 1 | | 149,729 |
| 12/17/80 | 10158 | 8.9 | 39 | 9 | 38 | 2 | | 152,276 |
| 12/18/80 | 10340 | 8.8 | 51 | 9.5 | 19.6 | 1 | | 155,840 |

# SAMPLES

## SAMPLE DESCRIPTIONS

| | |
|---|---|
| 260-290 | Very poor sample. Assortment of Shales, grey, brown, hard, very calcareous in part. |
| | Trace Sandstone, salt and pepper, moderately sorted, well cemented with calcite cement. |
| 290-320 | Good sample, Shale, medium to dark brown, hard, very calcareous, some carboniferous partings, blocky. |
| 320-350 | No sample. |
| 350-380 | No sample. |
| 380-410 | Siltstone, light brown, hard, moderately argillaceous, moderately calcareous. |
| 410-440 | Sandstone, light grey, medium grained, very silty, calcareous cement. |
| 440-470 | Limestone, medium brown, slightly argillaceous, hard, Shale, light grey, moderately calcareous, firm. |
| 470-500 | Siltstone, medium grey, slightly sandy, pyritic, micaceous, trace organic matter. |
| 500-530 | Sandstone, medium grained, subrounded, moderately sorted, micaceous, poorly cemented (calc.) good porosity. |
| 530-560 | Sandstone, fine-medium grained, silty, calcareous cement, argillaceous. |
| | Dolomite, light tan, beige, crypto-crystalline, very firm, moderately argillaceous. |
| | Siltstone, white, purple, grey, firm-hard, pyritic, calcareous, argillaceous. |
| 560-590 | Shale, dark bluish green, firm-soft, granular texture. |
| | Sandstone, subangular-subrounded, medium-coarse grained, moderately sorted, micaceous, slightly frosted. |
| 590-620 | As above, minus Shale. |
| 620-650 | Sandstone, fine-coarse grained, subangular, poorly sorted. |
| | Trace Siltstone, light grey, sandy, soft firm. |

| | |
|---|---|
| 650-680 | Sandstone, fine-medium grained, moderately sorted, sub-rounded. |
| 680-710 | As above Trace Siltstone, grey, soft. |
| 710-740 | Sandstone, coarse-medium grained, subrounded, moderately sorted, silty and argillaceous in part. |
| | Shale (10%), medium bluish green, soft. |
| 740-770 | Siltstone, medium bluish green, brownish grey, sandy, non-calcareous. |
| 770-800 | As above. |
| 800-830 | Shale, medium bluish green, firm, granular texture, micaceous, pyritic, waxy, non-calcareous. |
| | Sandstone, fine-coarse grained, subrounded, poorly sorted, silty in part, argillaceous. |
| 830-860 | Shale, as above, also reddish brown, silty, firm-soft micaceous, non-calcareous, sandy in part. |
| 860-890 | Shale, yellowish brown, very soft, granular texture. |
| 890-920 | Siltstone, light brown, reddish brown, sandy, shaley, slightly calcareous, very argillaceous. |
| 920-950 | Siltstone, marroon, soft, argillaceous, slightly calcareous. |
| 950-980 | Sandstone, light grey, white, medium grain, rounded-sub-rounded, well sorted, pyritic, slightly calcareous. |
| 980-1010 | Sandstone, fine, medium grained, subrounded, moderately sorted, slightly pyritic, micaceous, calcareous. |
| 1010-1040 | As above. |
| 1040-1070 | As above |
| 1070-1100 | Sandstone, as above. |
| | Siltstone, medium bluish green, soft, non-calcareous, slightly argillaceous, glauconitic. |
| 1100-1130 | As above, Sandstone slightly coarser. |

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| 1130-1160 | As above, predominately Sandstone. |
| 1160-1190 | Limestone, cream, cryptocrystalline, hard, slightly argillaceous. |
| | Siltstone, dark bluish green, light grey, cream, very argillaceous, grading to Shale in bluish green, soft to hard. |
| 1190-1220 | Sandstone, clear, very fine-fine grained, subrounded, moderately soft. |
| | Trace Limestone, cream, fragmental, fossiliferous, very hard. |
| 1220-1250 | Shale, medium yellowish brown, maroon, medium grey. Spotted with siliceous white 1/4 milimeter noduals, very slightly calcareous. |
| 1250-1280 | Siltstone, maroon, light grey, spotted as above, sandy in part, calcareous, hard. |
| 1280-1310 | Sandstone, fine grained, subrounded-subangular, well sorted, pyritic, 2-3% igneous rock fragments, calcareous, fair-poor porosity. |
| | Siltstone, grey, white, spotted, calcareous, hard. |
| 1310-1340 | Sandstone as above. |
| 1340-1370 | Shale, medium grey, very hard, moderately calcareous, platy. |
| | Siltstone, maroon, spotted with white siliceous 1/4 mm spots, calcareous. |
| | Sandstone, medium grained, fine grained, frosted in part, 2-3% igneous rock fragments. |
| 1370-1400 | Sandstone, very fine-fine grained, subangular, well sorted, frosted in part, 2-3% Igneous rock fragments, pyritic. |
| | Siltstone, light grey, very firm, slightly calcareous, sandy in part, moderately argillaceous. |
| 1400-1430 | Sandstone, as above. |
| | Shale, grey, spotted white as above, silty. |
| 1430-1460 | Siltstone, brownish green, maroon, light grey, black, spotted as above, hard, predominately calcareous, some non-calcareous. |

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| 1430-1460 continued | Trace Shale as above. |
| | Trace Sandstone, medium grained, pyritic, good porosity. |
| 1460-1490 | Sandstone, fine-medium grained, subrounded-subangular, well sorted, pyritic, micaceous, trace rock fragments. |
| | Trace Shale, light grey, firm, brittle, calcareous. |
| 1490-1520 | Sandstone, very fine-fine grain, silty in part, tight, calcareous, pyritic. |
| | Shale, yellowish green, spotted as above, hard. |
| 1520-1550 | Sandstone, very fine grained, moderately sorted, sub-rounded, argillaceous, calcareous, probably tite. |
| 1550-1580 | Shale, dark bluish green, yellow, brown, soft, firm, calcareous in part, platey. |
| | Limestone, cream, dense, dolotic, hard. |
| | Trace Sandstone, medium grained, pyritic. |
| 1580-1610 | Shale, as above, predominately medium grey, firm, platey, calcareous. |
| | 10% Sandstone, very fine grained, very calcareous, poor porosity. |
| 1610-1640 | Limestone, cream, very fossiliferous, pelletal?, shell fragments, hard. |
| | Siltstone, light-medium grey, argillaceous, calcareous, firm, brittle. |
| | Shale, as above. |
| | Sandstone, as above. |
| 1640-1670 | Siltstone, maroon, soft, argillaceous. |
| 1670-1700 | Siltstone, as above, also some brownish red. |
| 1700-1730 | Siltstone, maroon, grey, white, very firm, very argillaceous. |
| | Sandstone, medium grain, angular-subangular, poorly sorted, |

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| 1700-1730 continued | very calcareous, well cemented, argillaceous. |
| 1730-1760 | As above. |
| 1760-1790 | Sandstone, fine medium grained, subrounded, moderately sorted, frosted in part. |
| | Siltstone, as above. |
| 1790-1820 | Sandstone, as above. |
| | Shale, yellow, greenish blue, soft, firm. |
| | Siltstone, maroon, very firm, very argillaceous, non-calcareous. |
| 1820-1850 | Siltstone, as above. |
| | Sandstone, as above. |
| 1850-1880 | Siltstone, as above, slightly calcareous in part, becoming less argillaceous. |
| 1880-1910 | Poor sample. Sandstone, very fine-fine grained, subrounded-subangular, moderately sorted, calcareous, friable, fair-good porosity. |
| 1910-1940 | As above. |
| 1940-1970 | Sandstone, predominately medium grained, some coarse grained, angular-subrounded, poorly sorted. |
| | Siltstone, maroon as above cavings? |
| 1970-2000 | No sample. |
| 2000-2030 | Shale, dark yellow, soft, silty in part, non-calcareous. |
| | Siltstone, light grey, very firm, moderately calcareous. |
| | Trace Limestone, light grey, argillaceous, firm, brittle. |
| | Trace Sandstone. |
| 2030-2060 | As above. |

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| 2060-2090 | Poor sample, predominately cavings? |
| | Shale as above. |
| | Limestone as above. |
| | Sandstone, fine grained, very tite, very calcareous. |
| 2090-2120 | Very poor sample. |
| | Predominately Siltstone, maroon; Shale, maroon. |
| | Some Siltstone, cream; Sandstone. |
| 2120-2150 | Very poor sample. |
| | Shale, pinkish purple, firm, silty, platey in part. |
| 2150-2180 | Poor sample, Siltstone, maroon, pink. |
| | Shale, dark pink, moderately firm. |
| 2180-2210 | Poor sample, Sandstone, white, fine grained, moderately calcareous, moderately soft-firm, pyritic. |
| | Siltstone, maroon, very argillaceous, soft, calcareous in part. |
| | Trace chert, maroon, very hard. |
| 2210-2240 | Sandstone, clear, medium grain, subangular, well sorted, forsed in part, pyritic. |
| 2240-2270 | Sandstone, as above. |
| | Also some Siltstone, maroon, very argillaceous, soft, calcareous in part. |
| 2270-2300 | Sandstone, as above. |
| | Also some Siltstone, maroon, very argillaceous, soft, calcareous in part. |
| 2270-2300 | Sandstone, very fine-moderately fine grain, subangular-subrounded, moderately sorted. |
| | Siltstone, maroon, firm-hard, very argillaceous grading to Shale, slightly argillaceous. |

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| 2300-2330 | Sandstone, very fine-fine-medium grained, subrounded-subangular, moderately sorted, frosted in part, mostly clear. |
| | Shale, dark pink, waxy, hard, non-calcareous. |
| | Siltstone, as above, possible cavings. |
| 2330-2360 | Siltstone, maroon, ochre, calcareous in maroon, noncalcareous in ochre, moderately firm, very firm, grading to Shale. |
| | Sandstone, fine grain, subangular-subrounded, mostly clear, frosted in part. |
| 2360-2390 | Shale, ochre, maroon, firm, blocky, noncalcareous, grading to Siltstone. |
| | Siltstone, maroon, light grey, sandy, firm, noncalcareous. |
| | Sandstone, as above. |
| 2390-2420 | Sandstone, very fine-fine grained subrounded, moderately to well sorted, well cemented with calcareous cement. |
| | Siltstone, maroon, ochre, very argillaceous, firm-very firm, slightly-noncalcareous. |
| 2420-2450 | Sandstone, fine-moderately medium grain, subrounded, well sorted, calcareous cement. |
| | Siltstone, maroon, brownish red, slightly-noncalcareous, firm-moderately soft. |
| 2450-2480 | Limestone, cream, white, micro-cryptocrystalline, sand stringers, silty in part, pyritic, hard. |
| | Siltstone, maroon, light grey, cavings? |
| | Sandstone, fine grained, subangular, fair sorting, calcareous, fair porosity. |
| 2480-2510 | Sandstone, as above. |
| | Shale, and Siltstone, comprise 90% of sample. |
| | Probably cavings. |
| 2510-2540 | Shale, medium brown, maroon, silty in part, waxy in part, soft. |

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| 2510-2540 continued | Trace Sandstone as above. |
| 2540-2570 | Shale, as above, grading to Siltstone, then to Sandstone as above. |
| | Samples predominately cavings. |
| 2570-2600 | Sample predominately cavings. |
| | Drillrate indicates Sandstone. |
| | Sample consists of mostly Shale and Siltstone. |
| 2600-2630 | Shale, reddish brown, maroon, yellowish brown, soft, platey in part, predominately cavings. |
| 2630-2660 | Shale, as above. |
| 2660-2690 | Siltstone, light grey, very finely sandy in part, firm, very calcareous, grading to Sandstone, fine grain, rounded, frosted in part, friable. |
| 2690-2720 | Sandstone, clear, light grey, fine grain, very fine grained, silty in part, rounded, fairly sorted, friable in part, pyritic, well cemented with siliceous cement in part. |
| | Limestone, light brown, light grey, dolomitic in part, cryptocrystalline-granular, very argillaceous in part, grading to Shale. |
| 2720-2740 | Sandstone, as above, grading to Siltstone, very light grey, calcareous, firm. |
| 2740-2760 | Shale, dark red, very hard, moderately calcareous. |
| | Sandstone, very fine grain, rounded, fairly sorted, friable. |
| 2760-2780 | Sandstone, as above grading to Siltstone, very calcareous, very light grey, grading to Limestone, light grey, cream, silty, hard. |
| 2780 2800 | Shale, maroon, pink, spotted with white siliceous noduals, very silty in part, platey, very calcareous, moderately firm, brittle. |
| 2800-2820 | Sandstone, very fine-fine grain, salt and pepper, moderately firm, well sorted, rounded. |

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| 2800-2820 continued | Siltstone, light grey, cream, very argillaceous in part, soft, firm, calcareous. |
| 2820-2840 | Siltstone as above predominantly light grey, very firm, hard, grading to limestone, light, very firm, silty, slightly non-calcareous. |
| 2840-2860 | Shale as above, grading to Limestone, light grey, dense, hard, silty.<br>Siltstone as above, grading to Sandstone,salt and pepper fine grain, rounded moderately sorted, moderately argillaceous, calcareous, friable, |
| 2860-2880 | Sandstone as above.<br>Siltstone, light grey, light brownish grey, hard calcareous. |
| 2880-2900 | Siltstone,light-medium grey, slightly argillaceous, calcareous, firm.<br>Sandstone white, salt and pepper, fine grain, rounded moderately sorted, silty, calcareous cement, good porosity. |
| 2900-2920 | Shale, maroon, spotted white, firm, platey, blocky, cavings?<br>Siltstone as above, grading to Shale, light grey, pyritic, hard, slightly to non-calcareous. |
| 2920-2940 | Siltstone as above grading to Sandstone. White, salt and pepper, fine grained, rounded, moderately sorted, pyritic, argillaceous, very calcareous in part, fair to good porosity. |
| 2940-2960 | Sandstone as above. |
| 2960-2980 | Sandstone as above, becoming tight, argillaceous, very calcareous throughout, very pyritic, silty, grading to Siltstone, light-medium grey, very slightly calcareous.<br>Marlstone, grey, mottled, soft, pyritic. |
| 2980-3000 | Siltstone, light grey, cream, reddish grey firm-hard, slightly-moderately calcareous,Limestone, cream, crypto-crystalline, very hard, clean, blocky. |
| 3000-3020 | Sandstone, cream, fine grained, subrounded, silty, |

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| 3000-3020 continued | argillaceous, slightly calcareous, firm, poor-fair porosity.<br>Siltstone, cream, moderate-very calcareous, argillaceous, firm.<br>Shale, cream, silty, soft, calcareous. |
| 3020-3040 | Sandstone as above, somewhat cleaner good porosity.<br>Siltstone as above, some medium grey, very firm, non-slightly calcareous.<br>Trace Shale, maroon, (cavings ?). |
| 3040-3060 | Shale maroon, very firm,hard, some mottled with clear siliceous spots.<br>Limestone, cream, light brown, dense, crypto-crystalline, dolomitic in part, hard. |
| 3060-3080 | Sandstone, pink, white, clear, mottled, very well cemented, slightly calcareous, firm, silty, argillaceous. |
| 3080-3100 | Shale, dark brown, maroon, calcareous, hard, firm, platey. Limestone, medium grey, greyish brown, very silty, argillaceous, firm-hard. |
| 3100-3120 | Shale as above.<br>Siltstone,medium grey, very firm-hard, calcareous.<br>Sandstone, white, fine grained, very calcareous, friable, fair quality. |
| 3120-3140 | Sandstone,white, salt and pepper, fine grained, slightly calcareous, firm.<br>Siltstone, light grey, medium grey, hard, very slightly calcareous.<br>Marlstone, white, soft. |
| 3140-3160 | Siltstone, medium grey, calcareous, very hard, sandy.<br>Sandstone, white, salt and pepper, moderately calcareous,firm, friable, argillaceous, very well cemented, poor porosity. |
| 3160-3180 | Sandstone as above.<br>Shale, brown, platey, slightly calcareous, very firm.<br>Siltstone as above. |
| 3180-3200 | Siltstone, greenish grey, moderately calcareous, argillaceous, soft, sandy. |

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| 3200-3220 | Siltstone as above.<br>Shale or mudstone, medium greyish green, moderately soft, slightly calcareous. |
| 3220-3240 | As above. |
| 3240-3260 | As above, also Sandstone very fine grained, dark bluish-green, moderately calcareous, soft, argillaceous.<br>Limestone, cream, tan, crypto-crystalline, hard, clean. |
| 3260-3280 | Siltstone, bluish-green, medium grey, cream, moderately soft, very firm.<br>Shale, maroon, medium grey, firm, soft, blocky, non-moderately calcareous. |
| 3280-3300 | Siltstone as above.<br>Shale, greyish green, blocky,moderately calcareous, moderately soft-firm, silty in part. |
| 3300-3330 | Sandstone white, light, medium greenish grey, very fine grained, silty, moderately-slightly calcareous, firm-friable, argillaceous in part. Some loose medium-coarse grains.<br>Shale-Mudstone, medium greyish green, maroon, soft, slightly-non-calcareous.<br>Siltstone,grey, greenish grey, white, moderately calcareous, soft-firm, argillaceous. |
| 3330-3360 | Sandstone, loose grains, medium-coarse grain, medium-coarse grain, subrounded-subangular, non-frosted.<br>Siltstone medium grey, very light brown, coarsely sandy in part, very calcareous with limestone stringers, pyritic in part.<br>Shale, ochre, maroon, soft-moderately firm, blocky, calcareous. |
| 3360-3390 | Limestone, light grey, light brownish grey, dense-cryptocrystalline, slightly argillaceous, blocky hard, silty in part, dolomitic in part.<br>Sandstone, white, clear, salt and pepper, medium grained, slightly silty, fair quality. |
| 3390-3420 | As above increasing percentage of Sandstone, also some Siltstone, light-medium grey, calcareous, soft, very firm. |
| 3420-3450 | Sandstone, salt & pepper, fine-medium grained, |

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| 3420-3450 continued | rounded-subrounded, fairly sorted, moderately calcareous, silty in part.<br>Siltstone as above. |
| 3450-3480 | Sandstone, buff, fine grained, rounded, well sorted, very silty, slightly-non calcareous.<br>Also Sandstone as above. |
| 3480-3510 | Sandstone, medium-coarse grained, rounded-subrounded friable, abundant loose grains.<br>Also fine grained Sandstone as above. |
| 3510-3540 | As above, also Siltstone, buff, sandy, slightly calcareous. |
| 3540-3570 | Limestone, buff, sandy, hard, pyritic in part.<br>Sandstone as above.<br>Siltstone, medium grey, moderately calcareous, very firm. |
| 3570-3600 | As above. |
| 3600-3630 | Sandstone, white, clear, salt and pepper, fine grain, some medium grain, slightly calcareous, friable, fair porosity.<br>Siltstone, light grey, cream, light pink, thinly bedded, moderately calcareous, soft-firm. |
| 3630-3660 | Shale, medium brownish grey, light grey, white, firm-hard, earthy-vitreous, moderately calcareous, dolomitic in part.<br>Sandstone and Siltstone as above. |
| 3660-3690 | Shale, as above, mostly white, cream, dolomitic.<br>Sandstone, loose grains and clusters, fine-medium grained, subrounded, fairly sorted, slightly calcareous, friable in part. |
| 3690-3720 | Shale, dark grey, maroon, dark bluish green, earthy, waxy, firm, noncalcareous, fissle in part. |
| 3720-3750 | Shale as above.<br>Sandstone, clear, salt and pepper, fine-medium grained, rounded-subrounded, wellsorted, firm, brittle. |

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| 3750-3790 | Siltstone dark grey, greyish brown, firm, noncalcareous.<br><br>Sandstone, clear, fine-medium grained, abundant loose grains, rounded-subrounded, fairly sorted, firm in part, noncalcareous.<br><br>Shale, black, medium grey, light greenish grey, very hard, soft, silty in black, blocky. |
| 3790-3820 | Sandstone, light brown, very fine grain, very silty, noncalcareous, firm, brittle.<br><br>Also Sandstone, medium grained, loose grains, rounded.<br><br>Also Siltstone and Shale, as above (cavings ?) |
| 3820-3850 | Poor sample, Shale, red, ochre, (cavings).<br><br>Also some Sandstone, loose grains, medium-coarse grained, rounded-well rounded, pyritic. |
| 3850-3880 | Siltstone, light grey, moderately calcareous, very finely sandy, very firm.<br><br>Sandstone, grey, black specks, fine grain, silty, slightly calcareous, (abundant cavings). |
| 3880-3910 | Sandstone, loose grains, medium-fine grained, subrounded, fairly sorted (abundant cavings). |
| 3910-3940 | Good sample, Sandstone, salt and pepper, fine-medium grained, rounded, moderately sorted slightly calcareous, slightly argillaceous, fair-poor porosity. |
| 3940-3970 | As above. |
| 3970-4000 | Poor sample due to trip. Siltstone, medium grey, non-calcareous, firm, brittle.<br><br>Sandstone, white, light grey, very fine grained, day infill, soft, slightly calcareous. |
| 4000-4030 | Sandstone, white, light grey, medium grain, some very fine grain, rounded-subrounded, fairly sorted, friable-firm, trace clay in filling. |
| 4030-4060 | Sandstone, predominately loose grains, trace black |

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| 4030-4060 continued | specks, medium grained, rounded, well-fairly sorted, very friable, fair-poor porosity. |
| 4060-4090 | As above. |
| 4090-4120 | Sandstone, as above, more clusters, silty, clay in fill.<br><br>Siltstone, medium brownish grey, very firm-soft, non-calcareous, very argillaceous in part.<br><br>Trace Shale, dark grey, medium brownish grey, soft, brittle, noncalcareous, subwaxy. |
| 4120-4150 | Siltstone, as above.<br><br>Sandstone, cream, white, very fine-fine grained, firm, friable in part, argillaceous, noncalcareous. |
| 4150-4180 | Sandstone, white, clear, speckeled, fine-medium grained, rounded-subrounded, fairly sorted, slightly calcareous, firm in part, friable in part, dead oil stain in part. |
| 4180-4210 | Very poor sample due to trip, no description |
| 4210-4240 | Siltstone, light-medium grey, noncalcareous, firm, argillaceous, very finely sandy in part.<br><br>Sandstone, very fine grained, firm, silty, argillaceous, moderately calcareous.<br><br>Trace Shale, medium grey, moderately soft, subwaxy, (possible cavings?). |
| 4240-4270 | Sandstone, light grey, white, speckeled, predominately medium grained, some fine grained, rounded-subrounded, fair-good sorting, clay infill, moderately-slightly calcareous, firm in fine grain, friable in medium grain.<br><br>Siltstone, medium grey, firm, calcareous. |
| 4270-4300 | Sandstone, as above predominately fine grained, firm, tite. |
| 4300-4320 | Sandstone, white, salt & pepper, fine grain, subangular, well sorted, non-very calcareous, predominately firm, clay in filling, trace pyrite, silty in part. |

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| 4320-4350 | Siltstone, light-medium grey, firm-very firm, non-calcareous, grading to very fine grained Sandstone.<br><br>Sandstone, loose grains, trace clusters, fine-medium grain, rounded. |
| 4350-4380 | Siltstone, as above.<br><br>Sandstone, white specks, medium grey, firm-very firm, pyritic in part, noncalcareous.<br><br>Shale, medium grey, soft-firm, blocky, thinly bedded in trace. |
| 4380-4410 | Sandstone, white, speckeled, fine-medium grained, rounded-subrounded, fairly sorted, clay in filling, friable, poor-fair porosity. |
| 4410-4440 | Sandstone, as above. |
| 4440-4470 | Sandstone, as above, grading to Siltstone, medium grey, firm-soft, noncalcareous. |
| 4470-4500 | As above increasing percentage of Siltstone becoming light grey. |
| 4500-4530 | Sandstone, clear, white, salt and pepper, fine-medium grain, subangular, fairly sorted, firm, friable in part.<br><br>Shale, medium grey, platy, subwaxy-waxy, thinly bedded in part, soft. |
| 4530-4560 | Very poor sample, no description. |
| 4560-4590 | Shale, dark grey, dark greyish brown, platey, soft, subwaxy, noncalcareous.<br><br>Siltstone, dark greyish brown, argillaceous, hard, slightly calcareous.<br><br>Sandstone, clear, white, salt and pepper, predominately fine grain, some medium grain, subangular, fairly sorted, firm, friable in part. |
| 4590-4620 | Siltstone, medium brown, medium grey, salt and pepper, very calcareous and hard in brown; argillaceous, soft, in grey and salt and pepper. |

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| 4590-4620 continued | Shale as above, carbonaceous in part,<br><br>Trace Mudstone, light green, soft, noncalcareous.<br><br>Trace Sandstone, cream, salt and pepper, fine grain, subrounded, well sorted, firm, clay in fill, noncalcareous, silty |
| 4620-4650 | As above. |
| 4650-5680 | Siltstone, predominately white, speckeled, moderately calcareous, firm-very firm, some as above.<br><br>Shale, decreasing percentage 5-10% as above, some light brown. |
| 4680-4710 | Siltstone, as above, grading to very fine grained Sandstone. |
| 4710-4740 | Sandstone, salt and pepper, medium-light brown, fine-medium grain, subangular, poorly sorted, very argillaceous in part, very poor porosity. |
| 4740-4770 | Siltstone, light medium grey, light brown, dark brown, soft, noncalcareous, very argillaceous, sandy in part.<br><br>Shale, medium grey, soft, earthy. |
| 4770-4800 | Sandstone, salt and pepper, fine grain, rounded, moderately well sorted, friable, slightly calcareous. |
| 4800-4830 | Shale, medium-dark grey, light greyish green, soft, waxy, earthy, carbonaceous laminations in part, blocky in most.<br><br>Siltstone, dark brown, firm, carbonaceous streaks. |
| 4830-4860 | As above. |
| 4860-4890 | Sandstone, salt and pepper, fine grained, subrounded-subangular, well-moderately sorted, friable in part, moderately-very calcareous, carbonaceous in part. Abundant Shale cavings. |
| 4890-4920 | Shale, light greenish grey, dark red, very soft, waxy, ochre partings. |

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| 4920-4950 | Sandstone, white with very light brown tint, fine grain, some medium grains, rounded-well rounded, well sorted, nonfrosted, abundant loose grains, trace oil stain, trace with slow streaming weak cut, trace with bright yellow flourescence. |
| 4950-4980 | Sandstone, fine-very fine grain, white, cream, very slightly calcareous, clay infill, carbonaceous streaks.<br><br>Shale, black, very carbonaceous, coaly in part.<br><br>Siltstone, dark brown, soft, argillaceous, noncalcareous. |
| 4980-5010 | As above. |
| 5010-5040 | As above, abundant Shale caving, some thin coal streaks. |
| 5040-5070 | Siltstone, dark grey, moderately firm, argillaceous, noncalcareous.<br><br>Sandstone, as above.<br><br>Shale, as above becoming very carbonaceous. |
| 5070-5100 | Siltstone, dark brown, dark grey, soft, argillaceous.<br><br>Shale, dark grey, black, medium grey, light greyish-green, soft, brittle in part, carbonaceous in part, waxy in part. |
| 5100-5130 | Shale, as above becoming predominately greenish-grey, waxy, soft.<br><br>Sandstone, white, fine grain, subrounded, well sorted, firm in most, friable in part. |
| 5130-5160 | Shale, black, carbonaceous, soft, very firm and brittle in part, coaly in part.<br><br>Siltstone, dark brown, very argillaceous, soft. |
| 5160-5190 | As above. |
| 5190-5220 | Sandstone, white, some black specks, fine grain, round-subrounded, well sorted, noncalcareous, slight clay filling, firm, poor porosity. |

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| 5220-5250 | Sandstone, as above. |
| | Siltstone, dark brown, firm, argillaceous. |
| 5250-5280 | Sandstone, white, trace black specks, medium grain-fine grained, rounded-subrounded, fairly-poorly sorted, noncalcareous, clay infilling, very tite, soft. |
| | Siltstone, dark brown, noncalcareous, soft. |
| 5280-5310 | As above. |
| 5310-5340 | Sandstone, as above becoming very carbonaceous, grading to Shale, dark brown, black, very carbonaceous, firm, brittle, vitceous luster, silty in part. |
| 5340-5370 | Shale, dark brown, black, soft, very silty in part, carbonaceous, noncalcareous. |
| 5370-5400 | As above, becoming predominately dark grey. |
| 5400-5430 | As above. |
| 5430-5460 | As above grading to Siltstone. |
| 5460-5490 | Siltstone, dark brownish grey, soft, very argillaceous, noncalcareous. |
| | Shale as above. |
| 5490-5520 | As above becoming sandy, still dark brown-dark brownish grey. |
| 5520-5550 | Shale, black, dark grey, soft-moderately soft, chunky, mica. |
| | Trace Sandstone, clear, white, fine-medium grain, rounded, fair sorting, friable, poor porosity. |
| 5550-5580 | Shale as above. |
| | Trace Sandstone as above, subrounded. |
| 5580-5610 | Sandstone, white, clear, fine-medium grain, subrounded-subangular, well-moderately well sorted, fair-good porosity in part, very tite in part, noncalcareous, firm, brittle, 3-5% with good greenish yellow fluorescence, very weak, slow cut in 1%. |

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| 5610-5640 | Sandstone as above, fractured-less fluorescence. |
| 5640-5670 | Sandstone, white, clear, light grey, very fine-medium grain, rounded-subrounded, moderately sorted, friable in medium grain, noncalcareous, trace Marlstone, white, soft, possibly from fracture zone, some dull yellow fluorescence in medium grain sands.<br><br>Shale, medium grey, dark red, ochre, black, firm, blocky, very silty in part. |
| 5670-5700 | As above increasing % of Shale, sand becoming predominately fine-very fine grained. |
| 5700-5730 | Shale, light grey, medium grey, soft, platey Limestone, stringers, cream, cryptocrystalline, hard.<br><br>Sandstone, as above. |
| 5730-5760 | Shale, light grey, maroon, soft, platey, brittle, calcareous in part.<br><br>Sandstone, white, dark brown, fine grain, very silty, argillaceous, soft-firm. |
| 5760-5790 | As above. |
| 5790-5820 | Shale, predominately maroon-light brownish red, some medium grey and dark brown, slightly-moderately calcareous, silty in part, waxy in part, plately, soft-moderately soft. |
| 5820-5850 | As above. |
| 5850-5880 | As above. |
| 5880-5904 | As above. |
| 5904-5930 | Shale, as above, some dark yellow, moderately firm, mushy,<br><br>Trace Sandstone, cream, white, fine grain, subangular, moderately well sorted, argillaceous, pyritic, slightly calcareous. |
| 5930-5960 | As above, trace Limestone, cream, hard, cryptocrystalline. |
| 5960-6200 | Shale, dark grey, dark brown, firm, silty, slightly calcareous, mostly dust (brown). |

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| 6200-6250 | Shale, dark grey, firm,noncalcareous. |
| | Sandstone clear-slightly frosted, fine-very fine grain, loose grains only, subangular. |
| 6250-6300 | Shale as above. |
| | Sandstone as above decreasing %. |
| 6300-6400 | Predominantly Sandstone, light brown, very fine-fine grain, loose grains, subangular-fair sorting silty. |
| | Some shale as above. |
| 6400-6500 | Shale, dark grey, firm-soft, trace sandy, noncalcareous, makes brown dust. |
| 6500-6600 | Shale,dark grey, firm,brittle in part, sandy, moderately calcareous. |
| 6600-6700 | Sandstone, light grey, very fine grain, very well cemented with calcite cement, very tight, argillaceous, firm, brittle. |
| 6700-6800 | Sandstone light grey, very fine grain, very well cemented with calcite cement, moderately firm, brittle, argillaceous, very tight. |
| | Shale, dark grey, firm, slightly brittle, moderately calcareous, silty in part, sandy in part, micaeous, blocky. |
| 6800-6900 | Shale dark grey, firm- very firm, slightly calcareous, micaeous, blocky. |
| 6900-6950 | Shale as above, becoming sandy in part, also more calcareous in part. |
| 6950-7000 | Shale dark grey, moderately firm, slightly calcareous in part, micaeous, blocky. |
| 7000-7050 | Shale as above, becoming sandy in part, also moderately calcareous when sandy, makes brown dust. |
| 7050-7100 | Shale dark grey firm, slightly brittle, slightly-moderately calcareous, poorly bedded. |

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| 7100-7150 | As above, silty. |
| 7150-7200 | As above, very poorly bedded. |
| 7200-7450 | As above, moderately firm, silty. |
| 7450-7540 | Shale, dark grey, moderately soft, slightly brittle, slightly calcareous, slightly silty. |
| 7540-7600 | As above, increasingly calcareous. |
| 7600-8050 | Shale, dark grey, moderately soft, slightly-moderately calcareous, blocky, some poorly thinly bedded, slightly silty, micaeous. |
| 8050-8200 | Shale, dark grey, moderately soft, slightly calcareous, silty in part, micaeous, blocky, makes brown dust. |
| 8200-8260 | Shale as above. |
| | Sandstone, medium brown, very fine grain, very well cemented with calcite cement, argillaceous, moderately firm, brittle, pyritic in part. |
| 8260-8350 | Shale as above. |
| 8350-8500 | Shale as above, some becoming translucent, very calcareous. |
| 8500-8650 | Siltstone, dark brownish grey, abundant loose grains, sandy, argillaceous, soft-friable. |
| | Shale as above. |
| 8650-8890 | Shale, dark grey, soft, silty, sandy, slightly-moderately calcareous, micaeous. |
| | Trace siltstone, white, sandy, trace pyrite, loose sand and silt in bottom of sample tray. |
| 8890-8950 | As above, decreasing amount for sand and silt. |
| 8950-9250 | As above, also some bright orange mineral fluoresence, possibly bentonite? |

SAMPLE DESCRIPTION
PAGE 22

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| 9250-9280 | Shale, dark grey -black, soft, brittle in part, moderately-very calcareous, micaeous, loose grains of sand and silt. |
| 9280-9340 | Shale as above, also some bright orange mineral fluoresence, bentonite?, white, tan, translucent, non-calcareous, soft, pyritic. |
| 340-9370 | Sandstone, white, clear, medium grain,, subrounded-subangular, all loose grains, fair sorting, probably good porosity. |
| | Shale as above. |
| 9370-9400 | Sandstone as above becoming finer. |
| | Siltstone light grey, very hard, noncalcareous, argillaceous. |
| | Shale light grey, subwaxy, soft, noncalcareous, also shale dark grey, probably mancos cavings. |
| 9400-9410 | Sandstone, white-light brown, very fine-medium grain. Some silt size, subangular-angular.<br>Shale as above, light greyish brown. |
| 9410-9420 | As above becoming predominantly shale, slightly silty, free pyrite. |
| 9420-9440 | Shale, medium brownish grey, light grey, soft, non-calcareous, subwaxy. |
| | Siltstone, light grey, hard, noncalcareous, very argillaceous. |
| | Sandstone, as above probably caving from 9340-9370. |
| 9440-9460 | Shale, becoming dark brown, soft, slightly translucent, grading to Mudstone. |
| | Siltstone, light grey, very argillaceous, firm. |
| | Sandstone, as above probably caving. |
| 9460-9490 | Sandstone, white, moderately frosted, fine-medium grain, rounded-subrounded, well sorted,all loose grains, probably has good porosity, no fluoresence or cut. |

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| 9460-9490 continued | Shale, as above. cavings. |
| 9490-9500 | Sandstone, becoming very fine grain-silty, loose grains, very argillaceous. |
| | Shale, black, firm, silty. |
| 9500-9520 | Sandstone white, frosted in part, medium grain, mostly loose grains, some aggregates, well cemented with siliceous cement, subangular, subrounded. |
| | Shale, dark grey, soft, similar to mancos. |
| | Trace Limestone, medium brown, hard, cryptocrystalline. |
| 9520-9530 | Shale, dark grey, soft, blocky, micaeous, noncalcareous, also abundant mancos shale cavings. |
| 9530-9540 | Shale, as above, some very light green, moderately soft, sandy, Trace Limestone, medium brown, cryptocrystalline hard. |
| | Siltstone, yellow, firm, large cuttings, argillaceous, trace sandy. |
| 9540-9550 | Shale, maroon, light green, black, hard. |
| | Limestone, cream, medium brown-dark brown, rose crystalline, cryptocrystalline, blocky, hard chert, white, very hard, silty and sandy. |
| 9550-9560 | As above, some pyrite in light green shale-Claystone. Sandstone, white very siliceous, very hard, poor porosity. |
| | Siltstone, maroon, lavender, firm, argillaceous. |
| 9560-9570 | As above, increasing % of chert and Sandstone,white, very siliceous, very hard. |
| | Sandstone, white, very fine grain, subangular,moderately well sorted, well cemented with calcite cement, |

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| 9560-9570 continued | very calcareous, soft. |
| 9570-9580 | As above, minus very fine grained Sandstone. |
| 9580-9590 | As above. |
| 9590-9600 | Shale, maroon, light green, black, hard, noncalcareous.<br><br>Sandstone, white, medium grained, loose grains, angular, clay fill, probably poor porosity.<br><br>Also Sandstone, white, very hard,very siliceous, no visible porosity. |
| 9600-9610 | As above, shale, dark grey, very firm-hard, splintery, noncalcareous. |
| 9610-9620 | Siltstone, light green, lavender, maroon, white, very hard, very firm, very siliceous.<br><br>Shale, dark brown-black, maroon, blocky, firm, nonbrittle. |
| 9620-9630 | Siltstone, predominantly lavender, hard, very siliceaous.<br><br>Shale,as above.<br><br>Trace of Limestone as above. |
| 9630-9650 | As above, minus Limestone. |
| 9650-9670 | Shale, light brownish red, maroon, black, light grey, hard, carbonaceous in black, cherty in part, noncalcareous silty in part, grading to Mudstone.<br><br>Black Shale,probably cavings from manos. |
| 9670-9680 | As above, very hard, siliceous, cherty. |
| 9680-9690 | As above, increasing % of black shale, probably mancos cavings. |

SAMPLE DESCRIPTION
PAGE 25

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| 9690-9700 | Predominantly Shale-Mudstone, red, moderately firm, platey- blocky, noncalcareous, silty in part. Also Shale, black cavings as above. |
| 9700-9710 | As above, Abundant mancos cavings. |
| | Some loose Sandstone grains, fine grain angular. |
| 9710-9720 | Shale-Mudstone, dark red, light-medium grey, medium brown,hard-firm, very siliceous, noncalcareous. |
| | Sandstone, white, very fine grain, firm-brittle, siliceous cement, poor porosity. |
| 9720-9730 | Poor sample, predominantly black Shale, cavings? Also Shale-Mudstone as above. |
| | Sandstone, white clear, fine grain, subangular, subrounded, all loose grains, chert grains. |
| 9730-9740 | Varigated Shales-Mudstone, as above. |
| | Sandstone as above. |
| 9740-9750 | Very poor sample mostly black Shale from mancos. |
| | Shale-Mudstone, as above, very silecous, cherty. |
| | Sandstone as above. |
| 9750-9760 | Shale dark red and black as above. |
| | Sandstone increasing % clear, frosted, very fine-fine grain, angular, subrounded, all loose grains. |
| 9760-9780 | Limestone, light green, very dolomitic in part, dense trace crystalline. |
| | Shale-Mudstone, light green, black, dark red, medium-dark brown, firm-hard, siliceous in part, dolomitic in part, silty. |
| | Trace Sandstone,loose grains as above. |

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| 9780-9790 | Shale-Mudstone, varigated, predominantly, light green and dark red, silty in part, siliceous in part, calcareous in green, noncalcareous in red. |
| 9790-9800 | As above.<br><br>Also Sandstone, white, clear, fine, grain, loose grains. Samples becoming lighter overall. |
| 9800-9810 | Shale-Mudstone, light green, light grey, soft silty, calcareous in part.<br><br>Sandstone, clear, medium grain, rounded-subrounded loose grains.<br><br>Chert, light green, very hard, silty. |
| 9810-9820 | Predominantly Siltstone, light green, hard siliceous, very calcareous in part, cherty in part.<br><br>Limestone, light brown, hard, cryptocrystalline-granular.<br><br>Shale-Mudstone, dark red, hard, very calcareous, platey, blocky. |
| 9820-9850 | Predominantly Siltstone, very light green, light tan, very calcareous in part, cherty in part, grading to chert.<br><br>Trace Sandstone, loose grains as above. |
| 9860-9870 | Shale-Mudstone, light green, light grey, medium brown, dark red, very firm-hard, very calcareous in part, grading to Limestone in part, siliceous in part, dolotic in part.<br><br>Sandstone, white, very fine-fine grain, slightly-moderately calcareous, chert grains, silty.<br><br>Limestone, light-medium brown, microcrystalline, mostly dolomitic. |

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| 9870-9910 | Very poor sample, mostly mancos cavings. Shale and Mudstone as above.<br><br>Limestone as above.<br><br>Trace Sandstone, white, fine grain, hard, moderately calcareous, very poor porosity. |
| 9910-9940 | Very poor sample, mostly mancos Shale cavings.<br><br>Shale,dark red, hard, silty, blocky, platey, calcareous in part.<br><br>Sandstone, white, light brownish grey, very fine-fine grain, very calcareous, very firm-friable, poor porosity. |
| 9945-9965 | Shale, dark red, hard, silty, blocky, platey, calcareous in part.<br><br>Sandstone, white, light brownish grey, very fine-fine grain, very calçareous, very firm-friable, very poor porosity. |
| 9965-10010 | No Samples. |
| 10010-10020 | Sandstone, biege, very fine grain, grading to Siltstone, very calcareous, soft-firm.<br><br>Mudstone, light grey, very light green, maroon, silty in part, firm, soft, moderately-very calcareous.<br><br>Sample 50% cavings from Mancos Shale. |
| 10020-10030 | Mudstone, light-medium grey, medium greenish-grey, red, firm, brittle, moderately-very calcareous.<br><br>Trace Sandstone ,loose grains, fine-medium grain, frosted-nonfrosted, rounded-subrounded. Also Sandstone, white, fine grain, very calcareous, no visible porosity.<br><br>Sample 60-70% cavings as above. |

SAMPLE DESCRIPTION
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| 10030-10040 | Limestone, medium-light brownish grey, cream, dense, soft-firm, slightly argillaceous, silty in part. |
| | Mudstone, as above. |
| | Sample 50% cavings as above. |
| 10040-10050 | As above, also trace Sandstone, loose grains, fine grain, frosted in part, rounded. |
| | Abundant Mancos Shale cavings. |
| 10050-10060 | As Above, minus Sandstone. |
| 10060-10070 | Sandstone, light grey, light brown, white, translucent, moderately calcareous, very fine grain, tight. |
| | Mudstone, light greenish grey, light grey, very calcareous, soft, moderately firm, sandy in part, silty in part, 60% Shale cavings from Mancos. |
| 10070-10080 | Mudstone, orange, very light green, soft, slightly-moderately calcareous, silty in part. |
| | Also as above. |
| | 40-50% Shale cavings as above. |
| 10100-10110 | Sandstone, white, light brown, very soft, very calcareous, argillaceous, no visible porosity, grading to Siltstone. |
| | Mudstone and trace Marlstone as above. |
| | 60% Shale cavings from Mancos. |
| 10110-10120 | As above. |
| | Mudstone predominantly light green, non-slightly calcareous soft. |
| | Mostly cavings as above. |

SAMPLE DESCRIPTION
PAGE 29

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| 10120-10130 | Sandstone, as above, light orange, very fine grain, soft, calcareous cement. |
| | Mudstone, light green orange, soft-firm, non-calcareous-moderately calcareous. |
| | 90% Cavings from mancos. |
| 10130-10140 | Sandstone, decreasing %. |
| | Increasing % of Mudstone, predominantly light orange, soft-firm, non-moderately calcareous, silty in part. |
| 10140-TD | Samples all very poor due to heavy Mancos Shale cavings. |
| 10140-10150 | Mudstone, predominantly orange, soft-firm, non-calcareous-moderately calcareous, silty in part. |
| | Sandstone, white, light brown, very soft, very calcareous, argillaceous, no visable porosity. |
| | Some Sandstone, light orange, very fine-fine grain, soft calcareous. |
| 10150-10160 | Mudstone, maroon, orange, light grey, soft, slightly calcareous, platey, very silty in orange. |
| | Trace Sandstone, white, calcareous, some loose grains, medium grain, subrounded-subangular, frosted-non-frosted. |
| 10160-10170 | As above. |
| | Some Limestone, cream, medium brown, cryptocrystalline-microcrystalline, firm. |
| 10170-10180 | As above, predominantly Mudstone, dark orange, maroon. |
| | Limestone as above. |
| 10180-10190 | As above, Mudstone also sandy, some light green. |
| | Trace Sandstone, light orange, very fine grain, |

SAMPLE DESCRIPTION
PAGE 30

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| 10180-10190 continued. | calcareous, poor sorting, subrounded, very friable. |
| 10190-10200 | Mudstone, dark red, orange, light green, light grey, brown, soft-hard, silty in part, waxy in part, plately, blocky. |
| | Trace Sandstone, white, very light green, fine grain, silty, noncalcareous, argillaceous, friable. |
| 10200-10210 | As Above, Mudstone, becoming very light orange, some brownish red, soft-very firm. |
| 10210-10230 | Sandstone, white, fine-medium grain, well rounded, fair sorting, very calcareous, grading to sandy Limestone, soft, trace Sandstone, light brown medium-fine grain, poor sorting, well rounded, friable, fair porosity. |
| | Mudstone as above. |
| 10230-10240 | Sandstone as above becoming predominantly clear, very calcareous. |
| | Shale, medium brown, firm, splintery, silty, non-calcareous. |
| | Mudstone, light green, orange, noncalcareous. |
| | Limestone stringers, medium brown, cryptocrystalline, very firm. |
| 10240-10250 | Sandstone, clear, white, medium-fine grain, well-rounded-rounded, calcareous cement, friable. |
| | Shale, medium brownish red, light brown, siliceous in part, soft-hard, splintery in part, blocky in part. |
| 10250-10260 | Sandstone as above, abundant loose grains. |
| | Shale, brown, dark brownish red, very firm blocky, silty in part. |
| 10260-10270 | Sandstone as above, trace very light orange. |

SAMPLE DESCRIPTION
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| 10260-10270 Continued | Shale, brown, as above. |
| 10270-10280 | Sandstone, orange, white, well rounded-rounded, fine-medium grain, moderately well sorted, friable, calcareous cement, fair porosity. |
| 10280-10290 | Sandstone as above. |
| | Mudstone, light orange, hard, silty, noncalcareous. |
| 10290-10300 | As above, some dark orange Siltstone, soft, firm. slightly-moderately calcareous. |
| 10300-10320 | As above, Sandstone becoming very friable, mostly loose grains. |
| 10320-TD | No samples due to lost circulation. |

*Mosbacher Production Co.*

*1300 Main Street, Suite 2100*

*Houston, Texas 77002*

*Telephone*
*713 651-0100*

October 20, 1981

Utah State Division of Oil & Gas
1588 W. North Temple
Salt Lake City, Utah 84116

RE: **Peterson Springs Unit #1**
State #27406 (Wildcat)
Grand County, Utah

Gentlemen:

Enclosed in duplicate is form OGCC-3, Well Completion Report for the above referenced gas well. Also enclosed, is a copy of the logs run on this well.

Mosbacher Production Co. request that the logs and all other data concerning this well be kept **confidential** for a period of not less than four (4) months.

Thank you in advance for your cooperation, and if further information is needed, please contact me.

Sincerely,

MOSBACHER PRODUCTION CO.

Beverly A. Dausin
Engineering Asst.

/bd
Enclosures

STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

March 15, 1982

Mosbacher Production Company
1300 Main Street, Suite 2100
Houston, Texas 77002

Re: Well No. Peterson Springs Federal #1
Sec. 14, T. 17S, R. 21E.
Grand County, Utah

Gentlemen:

According to our records, a "Well Completion Report" filed with this office October 20, 1981, from above referred to well, indicates the following electric logs were run: FDC-CNL-GR, DIL-GR, DILL. As of todays date, these logs have not been received at this office.

Rule C-5, General Rules and Regulations and Rules of Practice and Procedure, requires that a well log shall be filed with the Commission together with a copy of the electric and radioactivity logs.

Your prompt attention to the above will be greatly appreciated.

Sincerely,

DIVISION OF OIL, GAS AND MINING

Cari Furse

Cari Furse
Clerk Typist

Form OGC-1b

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

**STATE OF UTAH**
**DEPARTMENT OF NATURAL RESOURCES**
**DIVISION OF OIL, GAS, AND MINING**

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Mosbacher Production Co.

3. ADDRESS OF OPERATOR: 1300 Main, Suite 2100, Houston, Texas 77002

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1610' FSL & 1568' FEL, NWSE Sec. 14

5. LEASE DESIGNATION AND SERIAL NO.: State 27406

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: N/A

8. FARM OR LEASE NAME: Peterson Springs Unit

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 14-T17S-R21E

12. COUNTY OR PARISH: Grand

13. STATE: Utah

14. PERMIT NO.: 43-019-30706

15. ELEVATIONS (Show whether DF, RT, GR, etc.): KB 8392'; GL 8377'

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) Change of Operator | | | ☒ |
| (Other) | | | ☐ | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Mosbacher Production Co. has sold Peterson Springs Unit #1 & hereby designates Buckhorn Petroleum Co., 1625 Broadway, Suite 1200, Denver, Colorado 80217 (303/825-4771) as Operator effective March 16, 1984.

RECEIVED
MAR 28 1984
DIV. OF OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED Beverly Dawson TITLE Engineering Assistant DATE 3/15/84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

*Mosbacher Production Co.*
*1300 Main Street, Suite 2100*
*Houston, Texas 77002*

*Telephone*
*713 651-0100*

April 6, 1982

State of Utah
Natural Resources & Engery
Oil, Gas & Mining
4241 State Office Building
Salt Lake City, UT 84114

17S, 21E, Sec. 14

RE: Peterson Springs Federal #1
Grand County, Utah

In referance to your letter dated March 15, 1982, please find enclosed copies of the following logs:

FDC-CNL-GR
DIL-GR

If any further information is needed, please contact me.

Very truly yours,

MOSBACHER PRODUCTION CO.,

Nina Hampton

Nina Hampton
Admin. Asst.

HARPER OIL CO 3600 APR 01, 1984
PAGE 1

THE FOLLOWING METERS WILL HAVE CALIBRATION / SETTLEMENT TESTS RUN ON THE DATES INDICATED. STARTING TIME WILL BE 0800 OR AS SPECIFIED BELOW AND AT THE OFFICE OF THE NORTHWEST PIPELINE GRAND JUNCTION DISTRICT YOU WILL BE NOTIFIED SHOULD ANY CHANGES OCCUR IN THIS SCHEDULE. IF YOU HAVE ANY QUESTIONS ABOUT THE SCHEDULE, CONTACT OR WRITE THE DISTRICT OFFICE.

| METER CODE | WELL NAME | LOC | RUN | DAY | MO/YR | STARTING TIME |
|---|---|---|---|---|---|---|
| 92344010 | PETERSON SPRINGS #1 17S. 21E. 14 | 06 | 03 | 4 | 10/85 | 1100 |

Form OGC-1b

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: HARPER OIL COMPANY, Successor by Merger to Buckhorn Petroleum Company

3. ADDRESS OF OPERATOR: P.O. Box 5928 T.A., Denver, CO 80217

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1610' FSL & 1568' FEL (NW SE)

5. LEASE DESIGNATION AND SERIAL NO.: STATE 27406

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Peterson Springs Unit

9. WELL NO.: #1

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 14 T17S R21E

| 14. PERMIT NO. | 15. ELEVATIONS (Show whether DF, RT, GR, etc.) | 12. COUNTY OR PARISH | 13. STATE |
|---|---|---|---|
| 43-019-30706 | 8392' KB 8377' GL | Grand | Utah |

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) CHANGE OF OPERATOR | | | X |
| (Other) | | | ☐ | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Effective May 1, 1984, Buckhorn Petroleum Company and Harper Oil Company, wholly-owned subsidiaries of Midcon Corporation, merged to become Harper Oil Company.

Harper Oil Company's headquarters in Denver are 1625 Broadway, Suite 1200, P. O. Box 5928 T. A., Denver, CO 80217.

RECEIVED
JUN 1 1984
DIVISION OF OIL
GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED A. Nash, Jr. TITLE Operations Manager DATE May 1, 1984

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

*Mosbacher Production Co.*
*1300 Main Street, Suite 2100*
*Houston, Texas 77002*

*Telephone*
*713 651-0100*

June 25, 1984

Division of Oil & Gas Mining
State of Utah
4241 State Office Bldg.
Salt Lake City, Utah 84114

Attention: Pam Kenna

RE: January 83-December 83
FORM DOGC-4 for the
Peterson Springs Unit &
State 18-1A

Gentlemen:

Enclosed you will find copies of OGC-1b forms on the above captioned wells. These wells have been shut in since completion, which led us to beleive that no production forms were necessary.

In lieu of the forms, please accept this letter as verification of your conversation with Ms. Cynthia Smith of this office on June 24, 1984. As per your conversation, all files and forms on these wells were sent to Buckhorn Petroleum Co. when they assumed operations.

If you need any further help, please feel free to contact us at the above captioned number.

Yours very truly,
MOSBACHER PRODUCTION CO.

Roberta J. Jones
Production & Tax Clerk

/rj

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
JUN 10 1985
DIVISION OF OIL GAS & MINING

| | |
|---|---|
| 1. OIL WELL ☐ GAS WELL ☒ OTHER | 5. LEASE DESIGNATION AND SERIAL NO.: State 27406 |
| 2. NAME OF OPERATOR: HARPER OIL COMPANY | 6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A |
| 3. ADDRESS OF OPERATOR: P.O. Box 5928, T.A., Denver, Colorado 80217 | 7. UNIT AGREEMENT NAME: N/A |
| 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1610' FSL and 1568' FEL, NW SE | 8. FARM OR LEASE NAME: Peterson Springs |
| | 9. WELL NO.: 1 |
| | 10. FIELD AND POOL, OR WILDCAT: Wildcat |
| | 11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 14-T17S-R21E |
| 14. PERMIT NO.: 43-019-30706 | 12. COUNTY OR PARISH: Grand / 13. STATE: Utah |
| 15. ELEVATIONS (Show whether DF, RT, GR, etc.): 8377' GR | |

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) | | | |
| (Other) Flare Test | | | XX | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Harper Oil Company anticipates running a 10 day flare test on the above captioned well during the month of June, 1985. We estimate the rate of flare to be 250 MCFPD.

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 6/12/85
BY: John R. Baza

18. I hereby certify that the foregoing is true and correct

SIGNED John H. Benton TITLE Production Engineer DATE June 4, 1985

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

021709

Apache CORPORATION

SUITE 4900 ONE UNITED BANK CENTER/1700 LINCOLN STREET/DENVER, CO 80203-4549

303/831-6500

RECEIVED
FEB 09 1987

DIVISION OF
OIL, GAS & MINING

February 6, 1987

State of Utah
Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attention: Dianne R. Nielson, Director

Re: Sundry Notices - Change of Operator
Gordon Creek State #18-1A
Gordon Creek II Unit
Peterson Springs Unit #1
Peterson Springs Unit

Gentlemen:

Submitted in triplicate, please find Sundry Notices indicating a Change of Operator from MidCon Central Exploration Company to Apache Corporation, effective November 1, 1986, regarding the referenced wells.

Upon approval, please furnis us a copy of the approved form.

Thank you for you consideration.

Yours very truly,

Apache Corporation

Sally A. Woodruff
Contract Landman

SAW/es

Enclosures

Form OGCC-1 be

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: ML-27404/ ML-27406

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

1. OIL WELL ☐ GAS WELL ☐ OTHER

7. UNIT AGREEMENT NAME: 14-08-0001-19476

2. NAME OF OPERATOR: Apache Corporation

8. FARM OR LEASE NAME: PETERSON SPRINGS UNIT

3. ADDRESS OF OPERATOR: 1700 Lincoln, #4900, Denver, CO 80203-4549

9. WELL NO.: Unit Tracts #6 and #8

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: Peterson Springs Unit #1 Well T17S, R21E, Sec. 14: 1610' FSL and 1568' FEL

10. FIELD AND POOL, OR WILDCAT: Dakota Formation

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: T17S,R21E, Part Sec. 23; All Sec. 13,14,22,24,2

14. PERMIT NO.: 43-019-30706

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

12. COUNTY OR PARISH: Grand

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) | | | |
| (Other) Change of Operator | | | XX | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Change of Operator from MidCon Central Exploration Company to Apache Corporation effective November 1, 1986.

RECEIVED
FEB 09 1987
DIVISION OF
OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED Charles F. Mertz Charles F. Mertz TITLE Land Manager DATE February 4, 1987

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form OGC-1b

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

5. LEASE DESIGNATION AND SERIAL NO.: PGW/COMTN

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: 032911

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED MAR 28 1988 DIVISION OF OIL, GAS & MINING

1. OIL WELL ☐ GAS WELL ☒ OTHER N5040 Apache GEP

7. UNIT AGREEMENT NAME: Peterson Springs Unit

2. NAME OF OPERATOR: BWAB Incorporated

8. FARM OR LEASE NAME: Peterson Springs

3. ADDRESS OF OPERATOR: 1801 California St., Suite 1000, Denver, CO 80202

9. WELL NO.: #1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: NWSE 1601' FSL & 1578' FEL

10. FIELD AND POOL, OR WILDCAT: Peterson Springs

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 14, T17N-R21E

| 14. PERMIT NO. | 15. ELEVATIONS (Show whether DF, RT, GR, etc.) | 12. COUNTY OR PARISH | 13. STATE |
|---|---|---|---|
| 43-019-30706 | 8377' GL; 8392' KB | Grand | UT |

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) | | | ☐ |
| (Other) CHANGE OF OPERATOR | ☐ | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Effective April 1, 1988 the above referenced location will be operated by BWAB Incorporated, 1801 California St., Suite 1000, Denver, CO 80202. The Drilling & Production Manager is John Keller, 303-295-7444.

18. I hereby certify that the foregoing is true and correct

SIGNED John R. Keller TITLE Drlg & Prod. Manager DATE 3/18/88

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

BWAB INCORPORATED

May 9, 1988



State of Utah
Division of Oil, Gas & Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attn: John Baza

Re: State of Utah
State Sundry Notices

Dear Sir:

Enclosed herewith are 8 Sundry Notices in triplicate regarding the Change of Operator on these wells. Upon your approval of these notices would you please execute and return one copy of each for our files. If you should have any questions with regard to these notices, please do not hesitate to contact the undersigned.

Very truly yours,

BWAB Incorporated

Carrie M. Sullivan

Carrie M. Sullivan

CMS/klg

Enclosures

1801 CALIFORNIA STREET SUITE 1000 DENVER, COLORADO 80202 303 • 295 • 7444

Form OGC-1b

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

## SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
MAY 11 1988
DIVISION OF OIL, GAS & MINING

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Apache Corporation

3. ADDRESS OF OPERATOR: Suite 1900-1700 Lincoln Street, Denver, Colorado 80203-4519

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: NWSE 1601' FSL & 1578' FEL

5. LEASE DESIGNATION AND SERIAL

6. IF INDIAN, ALLOTTEE OR TRIBE NA

7. UNIT AGREEMENT NAME: Peterson Springs Un

8. FARM OR LEASE NAME: Peterson Springs

9. WELL NO.: #1

10. FIELD AND POOL, OR WILDCAT: Peterson Springs

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 14, T17S-R21E

| 14. PERMIT NO. | 15. ELEVATIONS (Show whether DF, RT, GR, etc.) | 12. COUNTY OR PARISH | 13. STATE |
|---|---|---|---|
| 43-019-30706 | 8377' GL; 8392' KB | Grand | UT |

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) Change of Operator | | | |
| (Other) | ☐ | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Please be advised Apache Corporation has sold its interest in the subject property to BWAB Incorporated. BWAB Incorporated will assume Apache's duties as operator of the subject property effective May 1, 1988. It was previously reported the change would be effective April 1, 1988 but the transfer of operations was postponed until May 1, 1988. Please direct all correspondence regarding operations of the property after January 1, 1988 to BWAB Incorporated at Suite 1000 - 1801 California Street, Denver, Colorado 80202 to the attention of John R. Keller - Drilling and Production Manager.

18. I hereby certify that the foregoing is true and correct

SIGNED Clyde E. McKenzie TITLE Vice President DATE 4/29/88
Clyde E. McKenzie

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

AREA CODE 303
PHONE 573-6021

J. C. THOMPSON
INDEPENDENT OIL OPERATOR
410 - 17TH STREET, SUITE 1305
DENVER, COLORADO 80202



January 10, 1990

State of Utah
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center; Suite 350
Salt Lake City, UT 84180

Re: Change of Operator

Gentlemen:

Enclosed, in duplicate, is and Entity Action Form reflecting a change of operator from BWAB, Inc. to J.C. Thompson for the Peterson Springs #1 well as of 1/1/90.

If you have any questions or desire additional information, please contact the undersigned.

Sincerely,

Brenda K. Fuechsel

Brenda K. Fuechsel

/bkf

Enclosure

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

**ENTITY ACTION FORM** - FORM 6

OPERATOR J. C. Thompson

ADDRESS 410 Seventeenth Street,
Suite 1305
Denver, CO 80202

OPERATOR ACCT. NO. N1240

| ACTION CODE | CURRENT ENTITY NO. | NEW ENTITY NO. | API NUMBER | WELL NAME | WELL LOCATION QQ | SC | TP | RG | COUNTY | SPUD DATE | EFFECTIVE DATE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E | 01424 | ——— | 43-019-30706 | Peterson Springs #1 | NWSE | 14 | 17S | 21E | Grand | | 01/01/90 |

WELL 1 COMMENTS:
Effective January 1, 1990, J. C. Thompson will operate the above property, succeeding BWAB Incorporated (Acct. No. 4320).

WELL 2 COMMENTS: (Single entity well, no entity change necessary)
2-9-90 JLK

RECEIVED
JAN 12 1990
DIVISION OF OIL, GAS & MINING

WELL 3 COMMENTS:

WELL 4 COMMENTS:

WELL 5 COMMENTS:

ACTION CODES (See instructions on back of form)
- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (explain in comments section)

NOTE: Use COMMENT section to explain why each Action Code was selected.

(3/89)

J. C. Thompson
Brenda K. Trachsel
Signature

Acct. / Secy.
Title

1-10-90
Date

Phone No. (303) 573-6021

**BWAB INCORPORATED**

January 25, 1990



State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attention: Tammy Searing

RE: Peterson Springs #1
NWSE Section 14, T17S-R21E
Grand County, Utah

Gentlemen:

Pursuant to your recent request, enclosed please find one (1) original and three (3) copies of a Sundry Notice with a Change of Operator for the referenced well.

Upon approval, please return one (1) executed copy to our offices for our files.

If you have any questions, please contact the undersigned.

Sincerely,

BWAB INCORPORATED

Erin K. Pettigrew

Erin K. Pettigrew
Operations Secretary

/ep
enclosures

cc: McRae & Henry, Ltd.
Attn: Kim Smith

J. C. Thompson

ANACONDA TOWER, SUITE 1900 555 SEVENTEENTH STREET DENVER, COLORADO 80202 303 • 295 • 7444

Form OGC-1b

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

# SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
JAN 29 1990
DIVISION OF OIL, GAS & MINING

1. OIL WELL ☐ GAS WELL ☒ OTHER

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME: Peterson Springs Uni

2. NAME OF OPERATOR: BWAB INCORPORATED

8. FARM OR LEASE NAME: Peterson Springs

3. ADDRESS OF OPERATOR: 555-17th St., Suite 1900, Denver, Colorado 80202-5516

9. WELL NO.: #1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: NWSE, 1601' FSL & 1578' FEL

10. FIELD AND POOL, OR WILDCAT: Peterson Springs

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 14-T17S-R21E

| 14. PERMIT NO. | 15. ELEVATIONS (Show whether DF, RT, GR, etc.) | 12. COUNTY OR PARISH | 13. STATE |
|---|---|---|---|
| 43-019-30706 | 8377' GL, 8392' KB | Grand | UT |

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

| NOTICE OF INTENTION TO: | | | | SUBSEQUENT REPORT OF: | | | |
|---|---|---|---|---|---|---|---|
| TEST WATER SHUT-OFF | ☐ | PULL OR ALTER CASING | ☐ | WATER SHUT-OFF | ☐ | REPAIRING WELL | ☐ |
| FRACTURE TREAT | ☐ | MULTIPLE COMPLETE | ☐ | FRACTURE TREATMENT | ☐ | ALTERING CASING | ☐ |
| SHOOT OR ACIDIZE | ☐ | ABANDON* | ☐ | SHOOTING OR ACIDIZING | ☐ | ABANDONMENT* | ☐ |
| REPAIR WELL | ☐ | CHANGE PLANS | ☐ | (Other) | | | ☐ |
| (Other) CHANGE OF OPERATOR | X | | | (NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Effective January 1, 1990, the above referenced location will be operated by J. C. Thompson, with offices at 410 Seventeenth Street, Suite 1305, Denver, Colorado 80202, (303) 573-6021.

| OIL AND GAS | |
|---|---|
| DRN | RJF |
| JRB | CLH |
| DTS | SLS |
| | |
| | |
| 1-TAS | |
| 2- MICROFILM | |
| 3- FILE | |

18. I hereby certify that the foregoing is true and correct

SIGNED John R. Keller TITLE Drilling & Production Mgr DATE 01/25/90

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

FORM 9

STATE OF UTAH

DIVISION OF OIL, GAS AND MINING

5. Lease Designation and Serial Number: ML-27406

6. If Indian, Allottee or Tribe Name:

7. Unit Agreement Name:

# SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to reenter plugged and abandoned wells. Use APPLICATION FOR PERMIT TO DRILL OR DEEPEN form for such proposals.

8. Well Name and Number: Peterson Springs #1

1. Type of Well: OIL ☐ GAS ☒ OTHER:

9. API Well Number: 43-019-30706

2. Name of Operator: J. C. Thompson

10. Field and Pool, or Wildcat: Peterson Springs

3. Address and Telephone Number: 5000 S. Quebec St., Ste. 640, Denver, CO 80237 (303) 220-7772

4. Location of Well

Footages:

County: Grand

QQ, Sec.,T.,R.,M.: NWSE Sec. 14-T17S-R21E

State: Utah

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| NOTICE OF INTENT (Submit in Duplicate) | | SUBSEQUENT REPORT (Submit Original Form Only) | |
|---|---|---|---|
| ☐ Abandon | ☐ New Construction | ☐ Abandon * | ☐ New Construction |
| ☐ Repair Casing | ☐ Pull or Alter Casing | ☐ Repair Casing | ☐ Pull or Alter Casing |
| ☐ Change of Plans | ☐ Recomplete | ☐ Change of Plans | ☐ Reperforate |
| ☐ Convert to Injection | ☐ Reperforate | ☐ Convert to Injection | ☐ Vent or Flare |
| ☐ Fracture Treat or Acidize | ☐ Vent or Flare | ☐ Fracture Treat or Acidize | ☐ Water Shut-Off |
| ☐ Multiple Completion | ☐ Water Shut-Off | ☒ Other workover | |
| ☐ Other _____ | | | |

Approximate date work will start _____

Date of work completion 8-22-96

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION REPORT AND LOG form.

* Must be accompanied by a cement verification report.

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

See attached Workover Report.

RECEIVED
DEC 05 1997
DIV. OF OIL, GAS & MINING

13.

Name & Signature: Walid Bou-Matar Title: Vice President Date: 11-25-97

(This space for State use only)

**Accepted by the Utah Division of Oil, Gas and Mining**

**FOR RECORD ONLY**

(4\94) (See Instructions on Reverse Side)

WO tax credit - 12/97

Peterson Springs #1
Clean out tubing and swab water
NWSE Sec. 14-T17S-R21E
Grand County, Utah

8-19-96 Move in, rig up Monument Well Service (MWS) Rig No. 8. Well had 640# casing pressure and 0# on tubing. Rigged up BOP, picked up three joints 2 ⅜" tubing and ran in the hole. Did not tag bottom. Laid down the three joints of 2 ⅜" tubing and started out of the hole with production tubing. Recovered 303 jts. of 1 ¼" tubing in good condition. Last five joints were wet, and we had some calcium deposits and sand in the standard seating nipple. There was also a standing valve on the end of the string. They must have had a piston or plunger lift at one time.

8-20-96 MWS on location 9 a.m. with the wrong bottom hole assembly. Waited for replacement parts, made up BHA and ran back in the hole with the 1 ¼" tubing. Added a 4-foot 1 ½" slotted orange peel sub with a changeover on bottom. Rigged down BOP and shut well in overnight.

8-21-96 MWS on location 9 a.m.. Had 650# pressure on casing and 0# on tubing. Equalized casing and tubing pressure before we opened tubing to the pit. Well did not unload. Crew did not have parts to pour a rope socket and swab. Shut down at 1:30 p.m.. Left tubing open to the pit overnight.

8-22-96 MWS on location 8:30 a.m. Well had 650# on casing and 0# on tubing. Poured a rope socket and started swabbing. Found fluid level 1,500 ft. from the bottom. Made 12 swab runs before well unloaded. Recovered 10 bbl. water and let well clean up for an hour before rigging down and releasing rig crew.

43-019-30706
T 17S R 21E 14

State of Utah

Department of
Natural Resources

Division of
Oil, Gas & Mining

ROBERT L. MORGAN
*Executive Director*

LOWELL P. BRAXTON
*Division Director*

MICHAEL O. LEAVITT
*Governor*

OLENE S. WALKER
*Lieutenant Governor*

March 19, 2004

CERTIFIED MAIL NO. 7002 0510 0003 8602 6471

Sally Sanchez
J.C. Thompson Company
7979 E Tufts Avenue Pkwy
Suite 815
Denver, Colorado 80237-2843

Re: Extended Shut-in and Temporary Abandoned Well Requirements for Fee or State Leases.

Dear Ms. Sanchez:

Thompson, J.C. Company, as of March 2004, has two (2) State Lease Wells (see attachment A) that are currently in non-compliance for extended shut-in or temporary abandonment status. Wells SI/TA beyond twelve (12) consecutive months requires filing a Sundry Notice (R649-3-36-1). Wells with five (5) years non-activity or non-productivity shall be plugged, unless the Division grants approval for extended shut-in time upon a showing of good cause by the operator (R649-3-36-1.3.3). For extended SI/TA consideration the operator shall provide the Utah Division of Oil, Gas & Mining with the following:

1. Reasons for SI/TA of the well (R649-3-36-1.1).
2. The length of time the well is expected to be SI/TA (R649-3-36-1.2), and
3. An explanation and supporting data if necessary, for showing the well has integrity, meaning that the casing, cement, equipment condition, static fluid level, pressure, existence or absence of Underground Sources of Drinking Water and other factors do not make the well a risk to public health and safety or the environment (R649-3-36-1.3).

Submitting the information suggested below may help show well integrity and may help qualify your well for extended SI/TA. **Note: As of July 1, 2003, wells in violation of the SI/TA rule R649-3-36 may be subject to full cost bonding (R649-3-1-4.2, 4.3).**

1. Wellbore diagram, and
2. Copy of recent casing pressure test, and
3. Current pressures on the wellbore (tubing pressure, casing pressure, and casing/casing annuli pressure) showing wellbore has integrity, and
4. Fluid level in the wellbore, and
5. An explanation of how the submitted information proves integrity.

If the required information is not received within 30 days of the date of this notice, further actions may be initiated. If you have any questions concerning this matter, please contact me at (801) 538-5281.

Sincerely,

Dustin K. Doucet
Petroleum Engineer

jc
cc: John Baza
Well File
SITLA

| | Well Name | API | Lease Type | Years Inactive |
|---|---|---|---|---|
| 1 | State 428 1 | 43-019-30169 | State | 9 Years 2 Months |
| 2 | Peterson Springs 1 | 43-019-30706 | State | 1 Year 9 Months |

Attachment A

AREA CODE 303
PHONE 220-7772

FAX
220-7773

# National Fuel Corporation

7979 EAST TUFTS AVENUE PARKWAY, SUITE 815
DENVER, COLORADO 80237-2843

April 29, 2004

***VIA FEDEX***

Dustin K. Doucet
Petroleum Engineer
State of Utah
Dept. of Natural Resources
Div. of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

RE: ***J. C. THOMPSON OPERATED SHUT-IN & TEMPORARILY ABANDONED WELLS STATE #428-1 AND PETERSON SPRINGS #1***

Dear Mr. Doucet:

This is written pursuant to your letter dated March 19 regarding the above-referenced wells. We would like to take this opportunity to thank you for the extension from the original April 18 deadline in filing our reply.

Please find attached duplicate Sundry Notices for each well, notifying the State that J. C. Thompson intends to return the wells to production by the end of May (for the Peterson Springs #1 well) and by the end of June (for the State #428-1 well).

Please contact me if there are further questions regarding this matter.

Sincerely,

Diane Thompson
J.C. Thompson Independent Operator



Encl. (Duplicate copies of Sundry Notices & Reports on subject wells)

FORM 9

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: ML-27406

# SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Peterson Springs #1

2. NAME OF OPERATOR: J. C. Thompson

9. API NUMBER: 4301930706

3. ADDRESS OF OPERATOR: 7979 E. Tufts Av-#815 CITY Denver STATE CO ZIP 80237

PHONE NUMBER: (303) 220-7772

10. FIELD AND POOL, OR WILDCAT: Peterson Springs

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1610' FSL; 1568' FEL

COUNTY: Grand

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 14 17S 21E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☑ NOTICE OF INTENT (Submit in Duplicate) | ☐ ACIDIZE | ☐ DEEPEN | ☐ REPERFORATE CURRENT FORMATION |
| Approximate date work will start: _____ | ☐ ALTER CASING | ☐ FRACTURE TREAT | ☐ SIDETRACK TO REPAIR WELL |
| | ☐ CASING REPAIR | ☐ NEW CONSTRUCTION | ☐ TEMPORARILY ABANDON |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ OPERATOR CHANGE | ☐ TUBING REPAIR |
| | ☐ CHANGE TUBING | ☐ PLUG AND ABANDON | ☐ VENT OR FLARE |
| ☐ SUBSEQUENT REPORT (Submit Original Form Only) | ☐ CHANGE WELL NAME | ☐ PLUG BACK | ☐ WATER DISPOSAL |
| Date of work completion: _____ | ☐ CHANGE WELL STATUS | ☑ PRODUCTION (START/RESUME) | ☐ WATER SHUT-OFF |
| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☐ OTHER: SI/TA extension |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Request extension of Shut-In/Temporarily Abandoned Status until end of May when subject well will be returned to production.

COPY SENT TO OPERATOR
Date: 5-12-04
Initials: CHD

RECEIVED
MAY 03 2004
DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) Diane Thompson TITLE _____

SIGNATURE Diane Thompson DATE 4/29/2004

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING

DATE: 5/10/04

BY: [signature]

* See attached letter dated May 10, 2004

(5/2000) (Instructions on Reverse Side)

State of Utah

Department of
Natural Resources

Division of
Oil, Gas & Mining

ROBERT L. MORGAN
*Executive Director*

LOWELL P. BRAXTON
*Division Director*

May 10, 2004

CERTIFIED MAIL NO. 7002 0510 0003 8602 5061

Ms. Diane Thompson
National Fuel Corporation
7979 East Tufts Avenue Parkway, Suite 815
Denver, Colorado 80237-2843

Re: Extended Shut-in and Temporary Abandoned Well Requirements for Fee or State Leases dated March 19, 2004. (J.C. Thompson Operated)

Dear Ms. Thompson,

The Division of Oil, Gas and Mining (DOGM) is in receipt of your letter and sundries dated April 29, 2004 (received by the Division on 5/03/2004) in regards to the two (2) shut-in wells operated by J.C. Thompson. It is the Division's understanding J.C. Thompson requests extended shut-in and temporary abandonment for the Peterson Springs #1 and State 428-1 so these wells may be returned to production in May and June respectively. The DOGM grants the following extensions, for the Peterson Springs #1 until May 31st, 2004 and for the State 428-1 until June 30th, 2004 as requested.

For reference, Attachment A lists the wells subject to this request. If you have any questions or need additional assistance in regards to the above matters please contact me at (801) 538-5281.

Sincerely,

Dustin Doucet
Petroleum Engineer

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7223 • *www.ogm.utah.gov*

| | Well Name | API | Lease Type | Years Inactive |
|---|---|---|---|---|
| 1 | State 428 1 | 43-019-30169 | State | 9 Years 2 Months |
| 2 | Peterson Springs 1 | 43-019-30706 | State | 1 Year 9 Months |

Attachment A

FORM 9

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: see attached list

# SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER

8. WELL NAME and NUMBER: see attached list

2. NAME OF OPERATOR: J.C. THOMPSON OPERATOR, LLC

9. API NUMBER:

3. ADDRESS OF OPERATOR: 7979 E Tufts Ave Pkwy #815 CITY Denver STATE CO ZIP 80237

PHONE NUMBER: (303) 220-7772

10. FIELD AND POOL, OR WILDCAT:

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY: Grand

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☑ NOTICE OF INTENT (Submit in Duplicate) | ☐ ACIDIZE | ☐ DEEPEN | ☐ REPERFORATE CURRENT FORMATION |
| Approximate date work will start: | ☐ ALTER CASING | ☐ FRACTURE TREAT | ☐ SIDETRACK TO REPAIR WELL |
| | ☐ CASING REPAIR | ☐ NEW CONSTRUCTION | ☐ TEMPORARILY ABANDON |
| | ☐ CHANGE TO PREVIOUS PLANS | ☑ OPERATOR CHANGE | ☐ TUBING REPAIR |
| | ☐ CHANGE TUBING | ☐ PLUG AND ABANDON | ☐ VENT OR FLARE |
| ☐ SUBSEQUENT REPORT (Submit Original Form Only) | ☐ CHANGE WELL NAME | ☐ PLUG BACK | ☐ WATER DISPOSAL |
| Date of work completion: | ☐ CHANGE WELL STATUS | ☐ PRODUCTION (START/RESUME) | ☐ WATER SHUT-OFF |
| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☐ OTHER: |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Effective March 17, 2005, J.C. Thompson Operator, LLC became the operator of all wells on the attached list, which were previously operated by J.C. Thompson.

previous operator: J.C. Thompson
7979 E Tufts Ave Pkwy #815
Denver CO 80237-~~2843~~ N1240

by: J.C. Thompson

new operator: J.C. Thompson Operator, LLC
7979 E Tufts Ave Pkwy #815
Denver CO 80237-2843 N2805

State + Fee BOND # LPM8756586
BLM Bond # LPM4021517

NAME (PLEASE PRINT) J.C. Thompson TITLE Member and Manager

SIGNATURE J.C. Thompson DATE 3/17/2005

(This space for State use only)

APPROVED 8/24/05
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(5/2000) (See Instructions on Reverse Side)

RECEIVED
MAY 25 2005
DIV. OF OIL, GAS & MINING

## SCHEDULE OF PROPERTIES

J C Thompson Operator, LLC
(effective March 17, 2005)

| API No. | Lease No. | Well Name | Location (Grand County, Utah) | |
|---|---|---|---|---|
| 4301930169 | ML-27428 | State 428 #1 | SWSE | 5-T16S-R22E |
| 4301930193 | ML-21913 | State 913 #1A | C SE | 9-T16S-R22E |
| 4301930706 | ML-27406 | Peterson Springs #1 | NWSE | 14-T17S-R21E |
| 4301916206 | UTU-05109 | Horse Point Unit 1-X | NWNE | 14-T16S-R23E |
| 4301920154 | UTU-020509 | Horsepoint M-4 | SENE | 6-T17S-R24E |
| 4301930013 | ML-21613 | Horsepoint M-6 | NESE | 32-T16S-R24E |
| 4301930049 | UTU-029600 | Horsepoint M-7 | SWNW | 6-T17S-R24E |
| 4301915671 | UTU-02981 | Moonridge 31-15 | NWNE | 15-T16S-R21E |
| 4301915672 | UTU-03008A | Segundo #2 | SWSE | 33-T16S-R21E |
| 4301915673 | UTU-04600 | Segundo #23-4 | NESW | 4-T17S-R21E |
| 4301930895 | SL-071892 | Westwater C-1 | NENW | 12-T17S-R23E |
| 4301930891 | SL-071892 | Westwater D-1 | SESE | 11-T17S-R23E |
| 4301930853 | SL-071893 | Westwater Unit #3 | S2N2NW | 13-T17S-R23E |
| 4301930852 | SL-071893 | Westwater Unit #5 | NESW | 18-T17S-R24E |
| 4301930892 | SL-071892 | Westwater B-1 | NWSW | 17-T17S-R24E |
| 4301915657 | SL-071892 | Westwater E2 | SWSE | 7-T17S-R24E |
| 4301915649 | SL-071892 | Castlegate 2 | SWNW | 18-T17S-R24E |
| 4301915650 | SL-071893 | Westwater Castlegate 4 | NENE | 13-T17S-R23E |
| 4301915652 | SL-071892 | Westwater Castlegate 6 | SENW | 18-T17S-R24E |
| 4301915653 | UTU-04011 | Westwater Castlegate 7 | NESE | 7-T17S-R24E |
| 4301915656 | SL-071892 | Castlegate D-2 | NWNE | 18-T17S-R24E |
| 4301915654 | SL-071891 | Westwater C9-10 | SWSE | 10-T17S-R23E |
| 4301930077 | SL-071892 | Westwater E5 | NWNE | 18-T17S-R24E |
| 4301915658 | SL-071892 | Westwater E3 | NENW | 17-T17S-R24E |
| 4301915662 | UTU-04011 | Westwater M3 | NWNW | 7-T17S-R24E |

SCHEDULE OF PROPERTIES
J C Thompson Operator, LLC
Page 2

| API No. | Lease No. | Well Name | Location (Grand County, Utah) | |
|---|---|---|---|---|
| 4301915660 | SL-071567 | Westwater M1 | SESW | 1-T17S-R23E |
| 4301915661 | SL-071892 | Westwater M2 | NWSE | 12-T17S-R23E |
| 4301915647 | UTU-026A | Bryson Canyon Govt #1 | SWSW | 8-T17S-R24E |
| 4301930641 | UTU-15889 | Middle Canyon #4-30 | SWSW | 30-T16S-R24E |
| 4301930925 | UTU-30123 | Middle Canyon #11-30 | SENW | 30-T16S -R24E |

Division of Oil, Gas and Mining

# OPERATOR CHANGE WORKSHEET

| ROUTING |
|---|
| 1. GLH |
| 2. CDW |
| 3. FILE |

Change of Operator (Well Sold)

Designation of Agent/Operator

**X Operator Name Change**

Merger

| The operator of the well(s) listed below has changed, effective: | **3/17/2005** |
|---|---|
| **FROM:** (Old Operator): | **TO:** ( New Operator): |
| N1240-Thompson, J. C.<br>7979 E Tufts Ave Pkwy, Suite 815<br>Denver, CO 80237-2843<br>Phone: 1-(303) 220-7772 | N2805-J. C. Thompson Operator, LLC<br>7979 E Tufts Ave Pkwy, Suite 815<br>Denver, CO 80237-2843<br>Phone: 1-(303) 220-7772 |

**CA No.** **Unit:** **PETERSON SPRINGS**

**WELL(S)**

| NAME | SEC | TWN | RNG | API NO | ENTITY NO | LEASE TYPE | WELL TYPE | WELL STATUS |
|---|---|---|---|---|---|---|---|---|
| PETERSON SPRINGS 1 | 14 | 170S | 210E | 4301930706 | 1424 | State | GW | P |
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## OPERATOR CHANGES DOCUMENTATION

**Enter date after each listed item is completed**

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 5/25/2005
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 5/25/2005

3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** _____
4. Is the new operator registered in the State of Utah: YES Business Number: _____
5. If **NO**, the operator was contacted contacted on: 5/31/2005

6a. (R649-9-2)Waste Management Plan has been received on: requested 8/24/05

6b. Inspections of LA PA state/fee well sites complete on: PENDING **due to name change on bond

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: 7/26/2005

8. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: n/a

9. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: n/a

10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: n/a

## DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 8/24/2005
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 8/24/2005
3. Bond information entered in RBDMS on: 8/24/2005
4. Fee/State wells attached to bond in RBDMS on: 8/24/2005
5. Injection Projects to new operator in RBDMS on: n/a
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

## FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: U0068

## INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: n/a

## FEE & STATE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number LPM8756586**
2. The **FORMER** operator has requested a release of liability from their bond on: n/a
   The Division sent response by letter on: n/a

## LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

**COMMENTS:**
** Bond rider deleted J. C. Thompson and added J. C. Thompson Operator, LLC

# United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

IN REPLY REFER TO
3180
UT-922

July 26, 2005

J.C. Thompson Operator, LLC
7979 East Tufts Avenue Parkway, #815
Denver, Colorado 80237-2843

Re: Peterson Springs Unit
Grand County, Utah

Gentlemen:

On June 6, 2005, we received an indenture dated March 17, 2005, whereby J.C. Thompson resigned as Unit Operator and J.C. Thompson Operator, LLC was designated as Successor Unit Operator for the Peterson Springs Unit, Grand County, Utah.

This indenture was executed by all required parties and the signatory parties have complied with Sections 5 and 6 of the unit agreement. The instrument is hereby approved effective July 26, 2005. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under the Peterson Springs Unit Agreement.

Your Utah statewide oil and gas bond No. UTB000186 will be used to cover all Federal operations within the Peterson Springs Unit.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Terry Catlin

Terry Catlin
Acting Chief, Branch of Fluid Minerals

Enclosure

bcc: Field Manager - Moab (w/enclosure)
SITLA
Division of Oil, Gas & Mining
File - Peterson Springs Unit (w/enclosure)
Agr. Sec. Chron
Reading File
Central Files
UT922:TAThompson:tt:7/26/05

JON M. HUNTSMAN, JR.
*Governor*

GARY R. HERBERT
*Lieutenant Governor*

# State of Utah
**DEPARTMENT OF NATURAL RESOURCES**

MICHAEL R. STYLER
*Executive Director*

**Division of Oil, Gas and Mining**

JOHN R. BAZA
*Division Director*

August 14, 2008

CERTIFIED MAIL NO.:7004 2510 0004 1824 5957

43 019 30706
Peterson Springs 1
17S 21E 14

Ms. Diane Thompson
JC Thompson Operators, LLC
7979 East Tufts Ave Parkway, #815
Denver, CO 80237-2843

Re: **Second Notice** of Extended Shut-in and Temporarily Abandoned Well Requirements for Wells on Fee or State Leases

Dear Ms. Thompson:

As of July 2008, JC Thompson Operators has two (2) State Mineral Lease Wells (see Attachment A) that are in non-compliance with the requirements for extended shut-in or temporarily abandoned (SI/TA) status. Wells SI/TA beyond twelve (12) consecutive months require the filing of a Sundry Notice in accordance with R649-3-36-1 for Utah Division of Oil, Gas & Mining ("DOGM" or "Division") approval. Wells with five (5) years non-activity or non-productivity shall be plugged, unless the Division grants approval for extended shut-in time upon a showing of good cause by the operator (R649-3-36-1.3.3).

In May 2004, the Division notified you by certified mail that the two wells listed (State 428-1 and Peterson Springs #1) were granted temporary extension so that they may be returned to production in May and June 2004. The extensions were as follows: Peterson Springs #1 until May 31st, 2004 and State 428-1 until June 30th, 2004 as requested. DOGM feels more than sufficient time has passed (well beyond the request for extension) to return the wells to production. Please submit your plans to produce or plug these wells to DOGM within 30 days of this notice or further actions will be initiated.

For extended SI/TA consideration the operator shall provide the Division with the following:

1. Reasons for SI/TA of the well (R649-3-36-1.1).

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

UTAH DNR
OIL, GAS & MINING

2. The length of time the well is expected to be SI/TA (R649-3-36-1.2), and

3. An explanation and supporting data if necessary, for showing the well has integrity, meaning that the casing, cement, equipment condition, static fluid level, pressure, existence or absence of Underground Sources of Drinking Water and other factors do not make the well a risk to public health and safety or the environment (R649-3-36-1.3).

Submitting the information suggested below may help show well integrity and may help qualify your well for extended SI/TA. **Note: As of July 1, 2003, wells in violation of the SI/TA rule R649-3-36 may be subject to full cost bonding (R649-3-1-4.2, 4.3).**

1. Wellbore diagram, and

2. Copy of recent casing pressure test, and

3. Current pressures on the wellbore (tubing pressure, casing pressure, and casing/casing annuli pressure) showing wellbore has integrity, and

4. Fluid level in the wellbore, and

5. An explanation of how the submitted information proves integrity.

If the required information is not received within 30 days of the date of this notice, further actions will be initiated. If you have any questions concerning this matter, please contact me at (801) 538-5281.

Sincerely,

Dustin K. Doucet
Petroleum Engineer

JP/js
Enclosure

cc: Jim Davis, SITLA
Well File
Operator Compliance File

# ATTACHMENT A

| | Well Name | Location | API | Lease Type | Years Inactive |
|---|---|---|---|---|---|
| 1 | STATE 428-1 | SWSE Sec 05 16S-22E | 43-019-30169 | ML-27428 | 3 Years 0 Months |
| 2 | Peterson Springs #1 | NWSE Sec 14 17S-21E | 43-019-30706 | ML-27406 | 1 Year 2 Months |

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

# SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

| | |
|---|---|
| 5. LEASE DESIGNATION AND SERIAL NUMBER: | ML-27406 |
| 6. IF INDIAN, ALLOTTEE OR TRIBE NAME: | NA |
| 7. UNIT or CA AGREEMENT NAME: | Peterson Springs |
| 1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER | |
| 8. WELL NAME and NUMBER: | Peterson Springs #1 |
| 2. NAME OF OPERATOR: | JC Thompson Operator, LLC |
| 9. API NUMBER: | 4301930706 |
| 3. ADDRESS OF OPERATOR: | 8400 E Prentice,#1100 CITY Greenwood Vill STATE Co ZIP 80111 |
| PHONE NUMBER: | (303) 220-7772 |
| 10. FIELD AND POOL, OR WILDCAT: | Peterson Springs |
| 4. LOCATION OF WELL FOOTAGES AT SURFACE: | ~~1601~~ 1610' FSL, ~~1578~~ 1568' FEL |
| COUNTY: | Grand |
| QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: | NWSE 14 17S 21E |
| STATE: | UTAH |

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☑ NOTICE OF INTENT (Submit in Duplicate) | ☐ ACIDIZE | ☐ DEEPEN | ☐ REPERFORATE CURRENT FORMATION |
| Approximate date work will start: 9/24/2008 | ☐ ALTER CASING | ☐ FRACTURE TREAT | ☐ SIDETRACK TO REPAIR WELL |
| | ☑ CASING REPAIR | ☐ NEW CONSTRUCTION | ☐ TEMPORARILY ABANDON |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ OPERATOR CHANGE | ☐ TUBING REPAIR |
| | ☐ CHANGE TUBING | ☐ PLUG AND ABANDON | ☐ VENT OR FLARE |
| ☐ SUBSEQUENT REPORT (Submit Original Form Only) | ☐ CHANGE WELL NAME | ☐ PLUG BACK | ☐ WATER DISPOSAL |
| Date of work completion: | ☐ CHANGE WELL STATUS | ☐ PRODUCTION (START/RESUME) | ☐ WATER SHUT-OFF |
| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☐ OTHER: |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

This Sundry Notice is being submitted for for notification of plans to integrity test the production casing string and repair as needed in the Peterson Springs #1 well. After testing and repairing, the well will be returned to production. Please review the following procedure. We will move a rig to location after the completion of the Horse Point State #13-1.

1. MIRU
2. ND wellhead. NU BOP.
3. Pull out with tubing(tbg).
4. Run in with 5 ½" retrievable bridge plug(RBP) and packer(Pkr).
5. Set RBP above top perf at 9356'.
6. Set Pkr inside 5 ½" liner top at 5720'.
7. Pressure test 5 ½" to 500# with 3% KCL water. If pressure holds, continue to step 8. If pressure does not hold, isolate problem area using packer.
8. Fill 9 5/8" csg/tbg annulus with 3% KCL water and pressure test to 500#. If pressure holds, run in with tbg and swab fluid down to RBP depth. Release plug and pull tbg, RBP and Pkr. Then run in and land tubing as before. If pressure does not hold continue to step 9.
9. POOH with 5 ½" pkr.
10. PU and RIH with 9 5/8" pkr. Use pkr to isolate problem area.
11. Once problem areas are identified, a new remedial program will be written.

COPY SENT TO OPERATOR
Date: 9.2.2008
Initials: KS

NAME (PLEASE PRINT) Andrew Busch TITLE V.P. of Operations

SIGNATURE Andy Busch (by DT) DATE 8/29/2008

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 9/2/08
BY:

RECEIVED
SEP 02 2008
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

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| 7. UNIT or CA AGREEMENT NAME: | Peterson Springs |
| 1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER | |
| 8. WELL NAME and NUMBER: | Peterson Springs #1 |
| 2. NAME OF OPERATOR: | JC Thompson Operator, LLC |
| 9. API NUMBER: | 4301930706 |
| 3. ADDRESS OF OPERATOR: | 8400 E Prentice,#1100 CITY Greenwood Vill STATE Co ZIP 80111 |
| PHONE NUMBER: | (303) 220-7772 |
| 10. FIELD AND POOL, OR WILDCAT: | Peterson Springs |
| 4. LOCATION OF WELL FOOTAGES AT SURFACE: | 1601' FSL, 1578' FEL |
| COUNTY: | Grand |
| QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: | NWSE 14 17S 21E |
| STATE: | UTAH |

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| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☐ OTHER: |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

This Sundry Notice is being submitted for for notification of plans to temporarily abandon the Peterson Springs #1. After recent integrity testing it has been determined that the existing Dakota formation by itself may not warrant repairs. As a result, National Fuel Corporation(NFC) is requesting to temporarily abandon the well while awaiting results of Mancos completions currently underway in the Moon Ridge area. The Peterson Springs had gas shows in the Mancos and has similar log characteristics as other wells currently being completed.
Through integrity testing, it has been determined that holes exist in the 9 5/8" casing at 3070' to 3700'. NFC proposes to set a 5 1/2" retrievable bridge plug 100' inside the 9 5/8" X 5 1/2" liner top at 5733' and a 9 5/8" retrievable bridge plug at 3000' to isolate the damaged area from the rest of the wellbore. NFC will re-enter the well next spring when weather and road conditions will allow, and will then begin repair and recompletion or will P&A.

**COPY SENT TO OPERATOR**
Date: 11.3.2008
Initials: KS

NAME (PLEASE PRINT) Andrew Busch TITLE V.P. of Operations

SIGNATURE Andy Busch (By DR) DATE 10/29/2008

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 11/30/08 (See Instructions on Reverse Side)
BY: Dustin Doucet
* Verbal given 10/28/08
** Should periodically monitor casing pressures and report to DOGM

RECEIVED
OCT 30 2008
DIV. OF OIL, GAS & MINING

(5/2000)

FORM 9

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: ML-27406

# SUNDRY NOTICES AND REPORTS ON WELLS

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PHONE NUMBER: (303) 220-7772

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COUNTY: Grand

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 14 17S 21E

STATE: UTAH

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| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☐ OTHER: _____ |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

This Subsequent Report is being submitted for for notification of the completed temporarily abandonment of the Peterson Springs #1. Please see attached report for details.

NAME (PLEASE PRINT) Andrew Busch TITLE V.P. of Operations

SIGNATURE Andrew Busch DATE 3/9/2009

(This space for State use only)

RECEIVED
MAR 16 2009
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

Peterson Spring #1

| | | |
|---|---|---|
| 10/13/08<br>Total Day Cost:<br>$19,515 | a.m. CSG 150 PSI; TBG 140 psi; Rig up Swabbco Service Rig; Blow well down. Nipple down tree, attempt to remove lock down pins on donut. All lock-down pins removed except one; the lock-down pin broke off inside the packing nut. Wait on grinder/sawsall, etc. to remove lock-down pin. miru Mountain West crew house; haul one load of 2 7/8 J-55 TBG to location; trying to locate and schedule 9 5/8 tools for tapered CSG string. Found part of tools needed in Rock Springs, part in Farmington, New Mexico. Coordinate with Baker Oil Tools for work string tools. H-20 delivered 2% KLC water to location; water from DeLambert Ranch. miru pump and tank. SDON. Day cost: Rig and crew $8535; Consultant $1150; Rental Mt. Camp, rental of generator and light tower $475. | |
| 10/14/08<br>Total Day Cost:<br>$12,075 | a.m. CSG-440 psi; TBG -0- psi; Wait on equipment to remove lock down pin on donut. Haul 2 7/8-J-55 TBG for work string. Continue to locate 9 5/8 and 5 ½ tools; coordinate with Baker Oil Tools. Lock down pin removed; nipple up BOP; unseat donut; SDON Day cost: Rig and crew $8300; Rental $475; Consultant $1150; Trucking $2148. | Total Accumulated Cost:<br>$31,594 |
| 10/15/08<br>Total Day Cost:<br>$14,778 | a.m. POOH with 2 3/8 production string; lay down same on trip OOH. Pick up 60 jts 2 7/8 work string; POOH with 2 7/8; wait on tools. SDON. Day cost: Rig and crew $7919; Rental $475 and $1710 ($2185); Trucking $990; Fuel $2534; Consultant $1150. | Total Accumulated Cost:<br>$46,372 |
| 10/16/08<br>Total Daily Cost:<br>$11,290 | a.m. Blow down well; wait on tools; pick up bit, 5 ½ CSG scraper, jars; pick up 2 7/8 TBG; RIH TO5749 liner top; had some difficulty getting into top. RIH 261 jts. To 8017' KBM; getting sticky; F/7940 T/8017; having to work to make additional hole. Restriction appears to be fill. POOH with work string. No residue in scraper blades to indicate what the fill is. Fluid level at 47-4800'KBM. Lay down 5 ½ mill, scraper, break out bolts on braden head. We will need to strip the tubing head and BOP's over 9.625 tools. SDON. Day cost: Rig and crew $7770; Rental $2370; Consultant $1150. | Total Accumulated Cost:<br>$57,662 |
| 10/17/08<br>Total Daily Cost:<br>$13,688 | a.m. Pick up 9.625 mill, scraper, jars; strip over TBG head and BOP. RIH to liner top (186 jts.) 5749; did not have any problems. POOH with work string; strip tools OOH; pick up 5 ½ WLTC plug; RIH; set plug at 5800 KBM; tag plug, POOH with work string; lay down on/off tool and jars. SDON Day cost: Rig and crew $7260; Rental $2260; Consultant $1150; Tools and tool supervisor $2478. | Total Accumulated Cost:<br>$71,350 |

| | | |
|---|---|---|
| 10/18/08<br>Total Daily Cost:<br>$13,405 | a.m. Pick up 9.625 PKR; strip over BOP and TBG head; RIH to 5657; set pkr for pressure test on CSG and liner. Press test to 1300 psi surface; 2450 psi with hydrostatic. 5 minute test; no leak off; bleed off; pull 10 stands to 5380 KBM; set pkr press test to 1300 psi for 5 minutes; no leak off. Cross over to pressure test annulus; will not test 295 bbl to fill; pump 15 bbl at 800 psi; 3 bbl/minute. Move PKR to 2455; 27 bbl to fill TBG; 7 bbl at 600 psi at 3 bbl/minute; 76 bbl down CSG 1000 psi to get test. RIH to 3071; pump 12 bbl down TBG pump in at 800 psi at 3 bbl/minute; test CSG to 1300 psi; 46 bbl test ok; RIH to 3688 pump 24 bbl; pump in at 3 bbl/minutes at 900 psi; pump down CSG 9 bbl with returns out CSG annulus to pit; pull TBG to 3500; pump 29 bbl down TSB ; return to surface; pull TBG to 3386; pump 20 bbl CSG; return to surface. Pull TBG to 3252, pump 16 bbl CSG, return to surface. Ran out of fluid at this point; hole is below 3071 KB; determine that hole is between 3071 and 3688 KBM.<br>Day cost: Rig and crew $8325; Rental $2370; Tools and supervisor $1560; Consultant $1150. | Total Accumulated Cost:<br>$84,755 |
| 10/20/08<br>Total Daily Cost:<br>$23,770 | a.m.. start isolation test at 3195'; work 2 stands (60') per set. F/3195 to/2023; all tests returns to surface out 9 5/8 annulus. Pull to 1257 KBM; returns to surface up annulus indicating the 9 5/8 PKR had failed. Pooh, lay down PKR; PKR returned to shop for repairs. SDON<br>Day cost: rig and crew $7780; rental $2370; Consultant $1150 (Trucking $1120 pump and tank, tubing work string) Tools $1270 | Total Accumulated Cost:<br>$108,525 |
| 10/21/08<br>Total Daily Cost:<br>$11,505 | a.m. pick up 9 5/8 Baker PKR; RIH to 3102, CSG will not test flow up 9 5/8 annulus. Move tools 10 stands to /2485; press test annulus of 9 5/8; will not test; move tools to 2177; no test; move tools to 608; still no test. Pull to surface; no test; strip PKR ooh; PKR plugged with scale, corrosion; filed dress PKR. Strip PKR in ole; RIA to 3719; press test down CSG; no test. RIH to 4949; ran out of water. Wait on water, SDON<br>Day Cost: Rig and crew $6715; Rental $2370; Tools $1270; Consultant $1150 | Total Accumulated Cost:<br>$120,030 |
| 10/22/08<br>Total Daily Cost:<br>$11,170 | a.m. Thaw frozen lines; set PKR at 4949; pump 20 bbl down TBG; catch pressure; pump 5 additional bbl at 800 PSI 3bbl/minute. Move PKR to 5259; test to 1000 PSI down TBG. Press test for 10 minutes at 1000 PSI; no leak off. Discontinue testing; pooh w/9 5/8 PKR; lay down Tools; pick up retrieving tool; RIH to retrieve plug at 5800 KBM. SDON<br>Day Cost: Rig and crew $6800; Rental $2470; Tools $750; Consultant: $1150 | Total Accumulated Cost:<br>$131,200 |

<table>
<tr><td>10/23/08<br>Total Daily Cost:<br>$11,037</td><td>a.m. RIH; tag 7-8' of fill on top of plug; circulate fill; J on to plug and release. Pooh laying down 261 jts 2 7/8 w/5 ½ RBP. Change over tools, etc. to 2 3/8; pick up BKR; N.C.; 1' perf pup; seat nipple; RIN with 40 jts; SDON<br>Day Cost: Rig and crew $6667; Rental $2470; Tools $750; Consultant $1150</td><td>Total Accumulated Cost:<br>$142,237</td></tr>
<tr><td>10/24/08<br>Total Daily Cost:<br>$28,014</td><td>a.m. Continue to pick up 2 3/8 production string. Rabbit TBG on trip in hole; total 185 jts. Nipple down BOP; set 5 ½ model R PKR; nipple up well head; replace packing nuts and lock down pins. Rig up to swab; load out rental 2 7/8 J-55; TBG for return to yard. Detail bottom to top; N.c; 2' perf jt; sn; 114 jts 2/3/8 model R PKR; 185 jts 2 3/8, k.b, total jts of 2 3/8 run in well 299; bad joint left on location, tubing and BHA detail, production string. Bottom to top
<table>
<tr><td></td><td>Length</td><td>Set Depth</td></tr>
<tr><td>N.C.</td><td>.40</td><td>9353.09</td></tr>
<tr><td>2' perf jt</td><td>2.00</td><td>9351.09</td></tr>
<tr><td>S.N.</td><td>1.10</td><td>9349.99</td></tr>
<tr><td>114 jts 2 3/8</td><td>3489.13</td><td>(tail pipe)5860.86</td></tr>
<tr><td>Model R PKR</td><td>7.00</td><td>5853.86</td></tr>
<tr><td>185 jts 2 3/8</td><td>5838.46</td><td>18.00</td></tr>
</table>
Total jts 2 3/8 299; one joint would not drift, left out<br>Day Cost: Rig and crew $6618; Rental $2470; Tools $11,000; Trucking $2731; Fuel $4045; Consultant $1150</td><td>Total Accumulated Cost:<br>$170,251</td></tr>
<tr><td>10/25/08<br>Total Daily Cost:<br>$16,361</td><td colspan="2">a.m. pick up swab tools for dummy run in hole with depthometer to flag line. Swab as follows:
<table>
<tr><th>Run#</th><th>Fluid Level</th><th>Pulled Down</th><th>BBL Recov.</th><th>Remarks</th></tr>
<tr><td>1</td><td>4100</td><td>5500</td><td>6</td><td></td></tr>
<tr><td>2</td><td>4100</td><td>5800</td><td>6</td><td></td></tr>
<tr><td>3</td><td>5300</td><td>7000</td><td>7</td><td></td></tr>
<tr><td>4</td><td>5300</td><td>7000</td><td>4</td><td>Looks like drilling mud mix</td></tr>
<tr><td>5</td><td>5300</td><td>7000</td><td>4</td><td>Having problems getting down due to drilling mud in well; remove 1 swab cup</td></tr>
<tr><td>6</td><td>6000</td><td>7500</td><td>1-2</td><td>Heavy drilling mud</td></tr>
<tr><td>7</td><td>6000</td><td>7400</td><td>1-2</td><td>Heavy drilling mud</td></tr>
<tr><td>8</td><td>6200</td><td>7500</td><td>1</td><td>Still drilling mud</td></tr>
<tr><td>9</td><td>6200</td><td>7500</td><td>-0-</td><td>Drilling mud</td></tr>
<tr><td>10</td><td>6600</td><td>7000</td><td>½</td><td>Drilling mud</td></tr>
<tr><td>11</td><td>6500</td><td>7000</td><td>½</td><td>Drilling mud</td></tr>
<tr><td>12</td><td>6000</td><td>6200</td><td>-0-</td><td>Having trouble getting swab through drilling mud</td></tr>
<tr><td>13</td><td>6200</td><td>6600</td><td>-0-</td><td>Mud heavy; having trouble getting swab through mud</td></tr>
</table>
SDON<br>Day Cost: Rig and crew $7330; Rental $550; Trucking $7331; Consultant $1150</td><td>Total Accumulated Cost:<br>$186,612</td></tr>
</table>

| | | |
|---|---|---|
| 10/27/08<br>Total Daily Cost:<br>$8042 | a.m. CSG-0 TBG-0 psi; rig up swab tools; RIH; tag fluid at 6000 (plus or minus); cannot get past 6500' with swab cups. RIH with sinker bars; working to get sinker bars to 7000' through heavy mud; cannot get below 8000'. Continue swabbing heavy mud; made total 13 swab runs; recovered est. 5-7 bbl of drlg mud. Remove swab cup and mandrel; RIH with sinker bar; only cannot get below 8200' K.B. Tubing plugged. Drilling mud swabbed back was not gas cut. SDON<br>Day Cost: Rig and crew $6242; rental $650; Consultant $1150 | Total Accumulated Cost:<br>$1194,654 |
| 10/28/08<br>Total Daily Cost:<br>$7915 | a.m. CSG-0 TBG-0 psi; pick up swab tools; RIH; tag fluid at 6000' (plus or minus); cannot get past $6500' with swab cups; RIH with sinker bars; working to get sinker bars to 7000'; tubing plugged. As per company decision; retrieve 5 ½ RBP; pooh with same. Tubing plugged on trip out. Working to unplug tubing; cannot get tubing unplugged. SWI; SDON<br>Day cost: Rig and crew $6115; Rental $650; Consultant $1150 | Total Accumulated Cost:<br>$202,659 |
| 10/29/08<br>Total Daily Cost:<br>$7050 | a.m. CSG-0 TBG-0 psi; RIH with production string; pooh; laying down 2 3/8 TBG to be returned to yard to clean out plugged TBG. Total 2 3/8 TBG on location 299 jts good; 1 bad joint. SWI SDON Wait on isolation plugs<br>Day cost: Rig and Crew $5250; Rental $650; Consultant $1150 | Total Accumulated Cost:<br>$209,709 |
| 10/30/08<br>Total Daily Cost:<br>$36,823 | a.m. Wait on Lone Wolf Wireline Service to set plug inside 5 ½ CSG; miru Lone Wolf Wireline; make up setting tool and 5 ½ RBP (5 ½ MOD RS harpoon wireline set retrievable bridge plug #R-802) supplied by Miller Packers. RIH; run CSG collar strip; set RBP at 5884 KBM; pooh with setting tool; righ down and release Lone Wolf Services. Pick up Halliburton 9 5/8 model VR RBP #601-9531; RIH; set RBP at 3119' KBM; pooh laying down 2 3/8 TBG. Rig down Halliburton setting tools and release same. Note: Both isolation plugs placed on long term rental. Nipple up well head; Rig down Swabbco Well Service Rig #7<br>Day cost: Rig and crew $6260; Rental $650; Consultant $1150; Halliburton $20,217; Miller Packers $3784; Lone Wolf Wireline $4763 | Total Accumulated Cost:<br>$246,532 |
| 10/31/08<br>Total Daily Cost:<br>$29,591 | a.m. Rig down camp; clean up location; release service rig and move all equipment and tools to Swabbco yard. MountainWest Man Camp to be removed from location 11/1/08<br>Daily Cost: Rig and crew $5975; Rental $650; Consultant $1150; 2 7/8 pipe rental $21,816; Additional costs to be included in accumulated cost as available | Total Accumulated Cost:<br>$276,123 |

FORM 9

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: ML-27406

# SUNDRY NOTICES AND REPORTS ON WELLS

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PHONE NUMBER: (303) 220-7772

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4. LOCATION OF WELL

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COUNTY: Grand

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STATE: UTAH

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| | ☐ CASING REPAIR | ☐ NEW CONSTRUCTION | ☐ TEMPORARILY ABANDON |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ OPERATOR CHANGE | ☐ TUBING REPAIR |
| | ☐ CHANGE TUBING | ☑ PLUG AND ABANDON | ☐ VENT OR FLARE |
| ☐ SUBSEQUENT REPORT (Submit Original Form Only) | ☐ CHANGE WELL NAME | ☐ PLUG BACK | ☐ WATER DISPOSAL |
| Date of work completion: | ☐ CHANGE WELL STATUS | ☐ PRODUCTION (START/RESUME) | ☐ WATER SHUT-OFF |
| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☐ OTHER: |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

This Sundry Notice is being submitted for for notification of plans for plug and abandonment of the Peterson Springs #1. Because of the extensive casing damage found, National Fuel Corporation(NFC) has determined that this well is no longer economic and repairs would not likely pay out through production efforts. Currently the wellbore is full of drilling mud that has intruded through the holes in the 9 5/8" casing. Please review the following P&A procedure.
(1) MIRU Service Rig. (2) ND wellhead. NU BOP. (3) RIH with retrieving head and tbg. Release and pull 9 5/8" RBP at 3119'. (4) RIH with retrieving head and tbg. Release and pull 5 1/2" RBP at 5884'. (5) RIH with tbg to 9484'. (6) Balance 50 sk plug of Class "G" cement across perfs at 9356' to 9484'. (7) POOH with 30 stands. Let cement cure then RIH and confirm cement top. (8) Pull tbg up to 5833'. (9) Balance 50 sk Class "G" cement plug across liner top at 5733'. Pull tbg. (10) RIH with wireline set 9 5/8" retainer to 3000' and set(holes in csg between 3071' and 3688'). (11) RIH with tbg and sting into retainer. Establish circulation. (12) Pump 300 sk Class "G" plug. Sting out of retainer with 5 bbls remaining in tbg. Reverse circulate tbg. (13) Pull tbg. (14) Perforate 9 5/8" casing 50' from surface. (15) Establish circulation through 9 5/8" / 13 3/8" annulus. (16) Circulate 50 sk Class "G" plug down 9 5/8" and up to surface through 13 3/8" casing. (17) ND BOP and remove remaining wellhead. (18) Erect surface marker and remove surface equipment from location.

**COPY SENT TO OPERATOR**
**Date:** 5.13.2009
**Initials:**

NAME (PLEASE PRINT) Andrew Busch TITLE V.P. of Operations

SIGNATURE DATE 3/9/2009

(This space for State use only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 5/12/09
BY:
* See Conditions of Approval (Attached)

RECEIVED
MAR 23 2009
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

JON M. HUNTSMAN, JR.
*Governor*

GARY R. HERBERT
*Lieutenant Governor*

# State of Utah
**DEPARTMENT OF NATURAL RESOURCES**

MICHAEL R. STYLER
*Executive Director*

**Division of Oil, Gas and Mining**

JOHN R. BAZA
*Division Director*

## *CONDITIONS OF APPROVAL TO PLUG AND ABANDON WELL*

| | |
|---|---|
| Well Name and Number: | Peterson Springs 1 |
| API Number: | 43-019-30706 |
| Operator: | J C Thompson Operator LLC |
| Reference Document: | Original Sundry Notice dated March 9, 2009, received by DOGM on March 23, 2009. |

Approval Conditions:

1. Notify the Division at least 24 hours prior to conducting abandonment operations. Please call Dan Jarvis at 801-538-5338.
2. **Add Plug #4: A 100' (± 75 sx) plug shall be placed inside and outside the 9 5/8" casing at the base of surface shoe from 250' to 150' as required by R649-3-24-3.6.**
3. Balance plugs shall be tagged to ensure they are at the depths specified in the proposal.
4. All annuli shall be cemented from a minimum depth of 50' to the surface.
5. Surface reclamation shall be done in accordance with R649-3-34 – Well Site Restoration.
6. All requirements in the Oil and Gas Conservation General Rule R649-3-24 shall apply.
7. If there are any changes to the procedure or the wellbore configuration, notify Dustin Doucet at 801-538-5281 (ofc) or 801-733-0983 (home) prior to continuing with the procedure.
8. All other requirements for notice and reporting in the Oil and Gas Conservation General Rules shall apply.

Dustin K. Doucet
Petroleum Engineer

May 12, 2009
Date

1594 West North Temple, Suite 1210, PO Box 145801, Salt Lake City, UT 84114-5801
telephone (801) 538-5340 • facsimile (801) 359-3940 • TTY (801) 538-7458 • *www.ogm.utah.gov*

UTAH DNR OIL, GAS & MINING

# Wellbore Diagram



**API Well No:** 43-019-30706-00-00 **Permit No:** **Well Name/No:** PETERSON SPRINGS 1

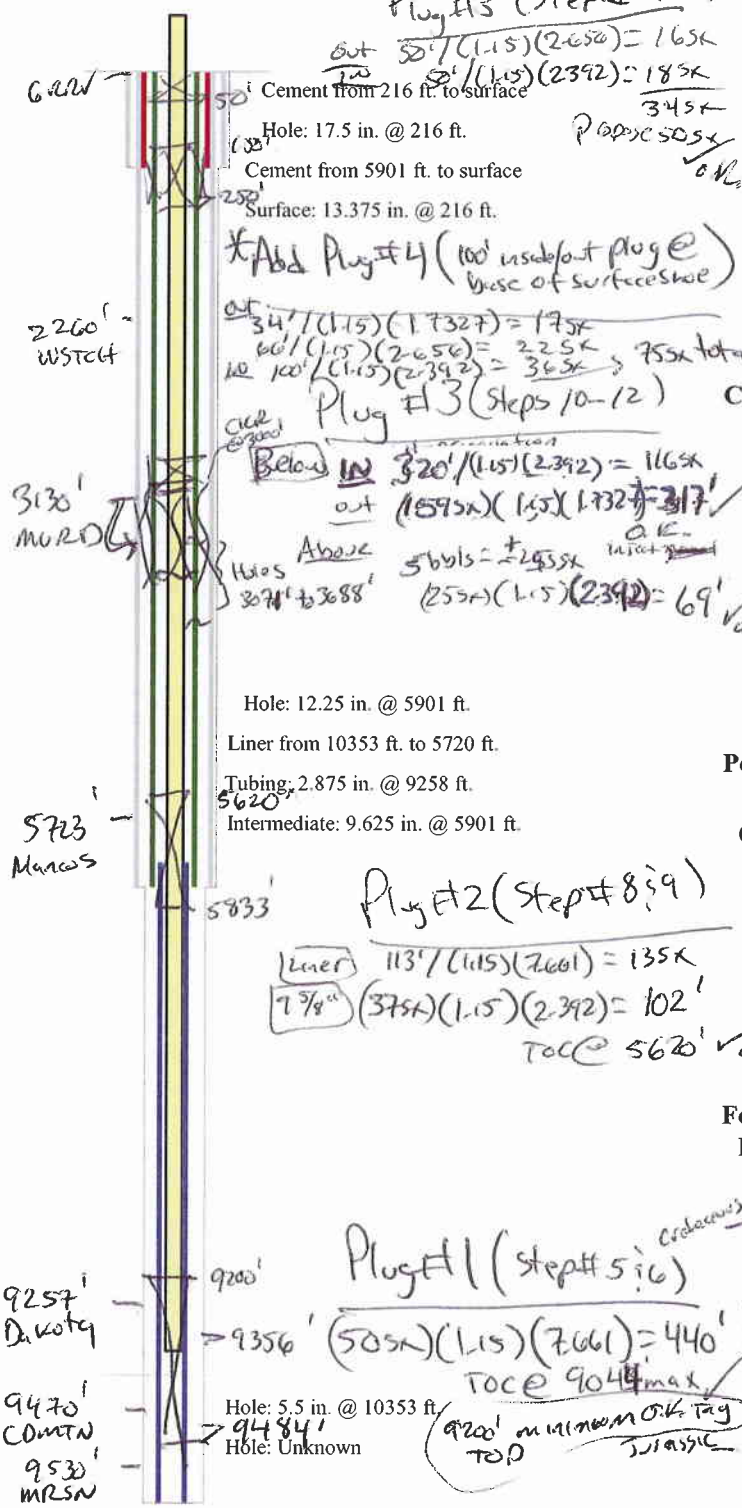
**Company Name:** J C THOMPSON OPERATOR LLC

**Location:** Sec: 14 T: 17S R: 21E Spot: NWSE

**Coordinates:** X: 624107 Y: 4353889

**Field Name:** PETERSON SPRING

**County Name:** GRAND




Plug #5 (steps 14-16)
out 50'/(1.15)(2.656) = 16SK
in 50'/(1.15)(2.392) = 18SK
34SK
Propose 50SK ok

*Add Plug #4 (100' inside/out plug @ base of surface shoe)
out 34'/(1.15)(1.7327) = 17SK
in 100'/(1.15)(2.392) = 36SK
66'/(1.15)(2.656) = 22SK
75SK total

Plug #3 (steps 10-12)
Below IN 320'/(1.15)(2.392) = 116SK
out (159SK)(1.15)(1.7327) = 317'
Above 56bbls = ±253SK
(253K)(1.15)(2.392) = 69' ok

Plug #2 (step #8,9)
Liner 113'/(1.15)(7.661) = 13SK
7 5/8" (375K)(1.15)(2.392) = 102'
TOC @ 5620' ok

Plug #1 (step #5,6)
9200'
(50SK)(1.15)(7.661) = 440'
TOC @ 9044' max
9200' minimum ok Tag TOD

## String Information

| String | Bottom (ft sub) | Diameter (inches) | Weight (lb/ft) | Length (ft) | Capacity (f/cf) |
|---|---|---|---|---|---|
| HOL1 | 216 | 17.5 | | | |
| SURF | 216 | 13.375 | 48 | 216 | |
| HOL2 | 5901 | 12.25 | | | |
| I1 | 5901 | 9.625 | 43.5 | | 2.392 |
| RBP | 3119 | 9.625 | | | |
| RBP | 5884 | 5.5 | | | |
| HOL3 | 10353 | 8.5 | | | |
| L1 | 10353 | 5.5 | 17 | | 7.661 |
| T1 | 9258 | 2.875 | | | |

12 1/4" x 9 5/8" (15%) → 1.7327
13 3/8" x 9 5/8" → 2.65%

## Cement Information

| String | BOC (ft sub) | TOC (ft sub) | Class | Sacks |
|---|---|---|---|---|
| I1 | 5901 | 0 | G | 300 |
| L1 | 10353 | 5720 | UK | 885 |
| SURF | 216 | 0 | G | 250 |

## Perforation Information

| Top (ft sub) | Bottom (ft sub) | Shts/Ft | No Shts | Dt Squeeze |
|---|---|---|---|---|
| 9356 | 9396 | | | |
| 9469 | 9484 | | | |

## Formation Information

| Formation | Depth |
|---|---|
| GRRV | 0 |
| WSTC | 2260 |
| MVRD | 3130 |
| BUKTG | 5344 |
| CSLGT | 5543 |
| MNCS | 5723 |
| DKTA | 9257 |
| DK-SD | 9353 |
| CDMTN | 9470 |
| MRSN | 9530 |
| SLTW | 9825 |

Cretaceous
Jurassic

**TD:** 10355 **TVD:** **PBTD:**

FORM 9

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: ML-27406

# SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: Peterson Springs

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☑ OTHER _____

8. WELL NAME and NUMBER: Peterson Springs #1

2. NAME OF OPERATOR: JC Thompson Operator, LLC

9. API NUMBER: 4301930706

3. ADDRESS OF OPERATOR: 8400 E Prentice,#1100 CITY Greenwood Vill STATE Co ZIP 80111

PHONE NUMBER: (303) 220-7772

10. FIELD AND POOL, OR WILDCAT: Peterson Springs

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 1601' FSL, 1578' FEL

COUNTY: Grand

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWSE 14 17S 21E

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ☐ NOTICE OF INTENT (Submit in Duplicate) | ☐ ACIDIZE | ☐ DEEPEN | ☐ REPERFORATE CURRENT FORMATION |
| Approximate date work will start: _____ | ☐ ALTER CASING | ☐ FRACTURE TREAT | ☐ SIDETRACK TO REPAIR WELL |
| | ☐ CASING REPAIR | ☐ NEW CONSTRUCTION | ☐ TEMPORARILY ABANDON |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ OPERATOR CHANGE | ☐ TUBING REPAIR |
| | ☐ CHANGE TUBING | ☑ PLUG AND ABANDON | ☐ VENT OR FLARE |
| ☑ SUBSEQUENT REPORT (Submit Original Form Only) | ☐ CHANGE WELL NAME | ☐ PLUG BACK | ☐ WATER DISPOSAL |
| Date of work completion: 7/8/2009 | ☐ CHANGE WELL STATUS | ☐ PRODUCTION (START/RESUME) | ☐ WATER SHUT-OFF |
| | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ RECLAMATION OF WELL SITE | ☐ OTHER: _____ |
| | ☐ CONVERT WELL TYPE | ☐ RECOMPLETE - DIFFERENT FORMATION | |

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Please see attached report describing P&A procedure in detail.

NAME (PLEASE PRINT) Andrew Busch TITLE V.P. of Operations

SIGNATURE Andrew Busch DATE 7/8/2009

(This space for State use only)

RECEIVED
JUL 15 2009
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

# J.C. Thompson
# Peterson Springs #1

**6/4/09** – MIRU Well Pluggers Inc rig. Moved in tanks tbg and cementing equipment.

**6/5/09** – Finished rigging up. ND wellhead. NU stripping head. PU & RIH with Halliburton retrieving tool and 98 jts of 2 3/8" tbg. Released 9 5/8" RBP at 3119'. POOH laying down tbg. Decided not to stand back tbg because of high winds. Stripped RBP through wellhead flange. Laid down RBP and retrieving tool. Shut in well. SDFD 4:30PM.

**6/8/09** – PU and strapped in with 5 ½" RBP retrieving head and 186 jts of tbg. Released 5 ½" RBP at 5884'. POOH standing back tbg. Laid down RBP and retrieving head. Pumped 130 bbls of fresh water down 9 5/8" csg. RIH with 48 stands. Shut in well. SDFD 6:30PM. Notified Bart Kettle at DOGM that we would be pumping 1st cement plug on 6/10.

**6/9/09** – Csg on a vacuum. RIH with tbg. Tagged fill at 9375'. POOH and laid down 1 jt. Pumped another 130 bbls of fresh water down 9 5/8". Pumped 160 bbls of fresh water down tbg. Caught pressure after first 6 bbls. Fluid level 1550' from surface. No returns at surface. RU cementing equipment. SDFD 3:00PM.

**6/10/09** – Csg on a vacuum. Pumped 5 bbls of fresh water down tbg followed by 50 sk cement plug. Displaced with 34.5 bbls of fresh water. No returns at surface. RD cementer. POOH with 58 stands. Shut in well. SDFD 2:00PM.

**6/11/09** – RIH with tbg. Tagged cement at 8333'. POOH with tbg to 5842'. RU cementer. Mix and pump 50 sk plug down tbg. Displaced with 20.5 bbls of fresh water. RD cementer. POOH and laid down 184 jts of tbg. 56 stands still in the derrick. Shut in well.

**6/12/09** – MIRU wireline. PU and RIH with CCL and 4 shot perf gun. Tagged liner top plug at 5481'. Pulled up to 3688' and perforated. POOH with CCL and spent gun. PU and RIH with CCL and 2nd 4 shot gun. Perforated at 250'. POOH with CCL and spent gun. ND BOP and spool. PU and RIH with CCL and 9 5/8" CR. Set retainer at 3000'. POOH with CCL and setting tool. NU BOP and spool. RIH with CR stinger and tbg. Stung into retainer. Pumped 46 bbls of fresh water down tbg. No returns at surface. SDFD 4:00PM.

**6/15/09** – MIRU Pro Petro Cementing. Pumped 7 bbls of fresh water down tbg and caught pressure. Pressured up to 2000# with no leak off. Surged pressure off tbg and attempted to pump. Pressured up to 2000# again. Stung out of retainer. Attempted to circulate tbg. Pressured up to 2000# with no leak off. POOH with tbg. Tbg standing full. Stinger plugged with dirt and cement chunks. Cleaned stinger and RIH. Circulated tbg with 13 bbls of fresh water before stinging retainer. Stung into retainer. Pumped 8 bbls of fresh water then mixed and pumped 300 sk plug. Displaced with 11.6 bbls of fresh water. Stung out of retainer. POOH laying down tbg. RIH with tbg in derrick then POOH laying down. ND BOP. NU wellhead. SDFD 4:00PM.

**6/16/09** – Pumped 260 bbls of fresh water down 9 5/8" and into 13 3/8" through perf holes. Unable to establish circulation. Mixed and pumped 30 sk plug down 13 3/8" and chased with 7 bbls of wash up. Shut in csg and tbg. Will attempt to circulate in the morning. Dug out cellar in preparation to cut off wellhead. SDFD 1:00PM.

**6/17/09** – Pumped 130 bbls of fresh water down 9 5/8" and into 13 3/8" through perf holes. No returns at surface. Mixed and pumped 30 sk plug down 13 3/8" and chased with 7 bbls of wash up. SDFD 11:30AM.

**6/18/09** – Pumped 10 bbls of fresh water down 13 3/8" with 1 bale of sawdust. Pumped 130 bbls of fresh water down 9 5/8" and into 13 3/8" through perf holes. No returns at surface. Mixed and pumped 35 sks of cement with 1 bale of sawdust mixed in. Chased with 8 bbls of wash up. SDFD 1:00PM. Left for vacation. Instructed Red Anthony on remaining plugging procedures.

**6/19/09** – Pumped 130 bbls of fresh water down 9 5/8" and into 13 3/8" through perf holes. No returns at surface. Mixed and pumped 30 sk plug down 13 3/8" and chased with 7 bbls of wash up. SDFD 11:30AM.

**6/22/09** – Pumped 60 bbls of fresh water down 9 5/8" and into 13 3/8" through perf holes. Returns at surface. Mixed and pumped 75 sk plug down 9 5/8" and displaced with 8 bbls of water. SDFD 2:00PM.

**6/23/09** – Cut off wellhead. RIH with 100' of 1 ¼" tubing inside 9 5/8" X 13 3/8" annulus. Mixed and pumped 70 sacks of cement. POOH with 1 ¼ tbg. SDFD 2:00PM.

**6/24/09** – RIH with 50' of 1 ¼" tbg inside of 9 5/8" X 13 3/8" annulus. Mixed and pumped 30 sx. Circulated cement to surface. RIH with 1 ¼" tbg inside 9 5/8" csg. Mixed and pumped 30 sx. Circulated cement to surface. Installed dry hole marker and covered wellhead. SDFD 12:00PM.